DOCUMENT RESUME

ED 415 286 TM 028 032

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TITLE Using Testlets.

INSTITUTION North Carolina State Dept. of Public Instruction, Raleigh. Div. of Accountability Services/Research.; North Carolina State Dept. of Public Instruction, Raleigh. Instructional Services.

PUB DATE 1997-00-00

NOTE 100p.

PUB TYPE Guides - Non-Classroom (055)

EDRS PRICE MF01/PC04 Plus Postage.

DESCRIPTORS Algebra; *Educational Planning; Elementary Secondary Education; English Instruction; *Item Banks; Language Arts; Mathematics Education; *Multiple Choice Tests; Reading Instruction; Resource Materials; Science Education; Social Studies; *Standards; State Programs; Student Responsibility; *Test Items; Test Use; United States History

IDENTIFIERS *North Carolina; Open Ended Questions; Sample Materials; *Testlets

ABSTRACT

This publication is a resource for North Carolina teachers of grade 3 through high school in English Language Arts, Mathematics, Social Studies, and Science. It describes five different ways to use "Item Bank Testlets," the sample test questions created for teachers to match goals and objectives in the state's "Standard Course of Study." These "Testlets" are a selection of multiple-choice and open-ended questions that are available for reading, mathematics, social studies, and science for grades 3 through 8 and for English I, U.S. History, and Algebra I for high school. Suggestions are given for using the "Testlets" for: (1) instructional planning; (2) diagnosis before instruction begins; (3) after an instructional unit; (4) for ongoing review; and (5) to learn how to answer questions. A section on "Unpacking Multiple Choice Items" presents teacher notes and transparencies for the subject areas. A section on "Responding to Open-Ended Questions" gives examples for reading and mathematics. A final section, "Students Taking More Responsibility," contains two handouts for students to use for their own preparation for study and tests. (SLD)

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Using Testlets

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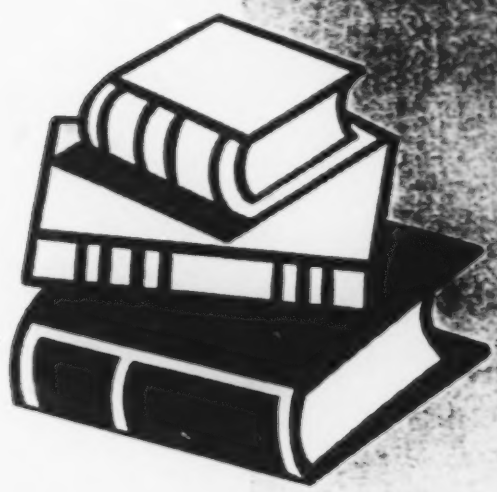

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Accountability/Evaluation Section/Instructional Services Division

Purpose of Document

This publication is a resource for teachers of grades 3 through high school in English Language Arts, Mathematics, Social Studies, and Science. It describes five different ways to use Testlets, the sample test questions created for teachers to match goals and objectives in the *Standard Course of Study*. However, the ideas for helping students to read questions carefully and reason their way through test questions can be applied to any materials. These materials are only a starting point; there are numerous ways to help students to become more autonomous learners and proficient test-takers.

Acknowledgments

Primary authors of the document are Jeane Joyner and Jan Williamson. Staff members from Instructional Services and Accountability Services contributed ideas, assisted in selecting the examples, and helped to edit the text. If you have questions about this publication, please call or write

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Using Testlets

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Overview

The North Carolina Department of Public Instruction has published many resources to assist teachers in developing strong instructional programs and in clarifying the types of questions on the end-of-grade (EOG) and end-of-course (EOC) tests. Designed to offer suggestions related to North Carolina's *Standard Course of Study*, most of the resources address a specific content area. This document focuses on making effective use of one of these resources, *Item Bank Testlets*.

About the Testlets

The *Testlets* are a selection of multiple-choice and open-ended questions that assess the content of the *Standard Course of Study*. They are available for reading, mathematics, social studies, and science at each grade level 3 through 8. At the high school level they are available for English I, U.S. History, and Algebra I. The *Testlets* have common features:

What is available

- Items are designed to assess the content in the *Standard Course of Study (SCS)*. Each item identifies the related goal and objective in the SCS.
- The multiple-choice items and open-ended questions were written by teachers, curriculum specialists, and professional item writers.
- For each objective there are a number of items, some multiple-choice and some performance or open-ended for each objective. For reading passages there are approximately 8 to 10 items per passage.
- Answers for the multiple-choice items and scoring rubrics for the open-ended items are included in each *Testlet*.
- Sample generic rubrics are included to assist in scoring the open-ended and performance items.
- The thinking skills addressed and the difficulty levels, based on field testing, are given.

Some versions of the *Testlets* are available in print as

For a list of Testlets and other resources available from DPI's Publications Office, call 919-715-1018 or toll free 800-663-1250.

Additional resources and Testlets are available from Local Option Testing (LOTS) at 919-515-4632.

well as electronic form. Print versions of the reading and mathematics *Testlets* for grades 3-8 are available from the Publications Office at the Department of Public Instruction. English I, Algebra I, U.S. History, Social Studies, and Science *Testlets* are available through Local Option Testing (LOTS). Computer disks of the mathematics and reading end-of-grade *Testlets* were available to testing coordinators when the materials were first published.

About this Resource

Following the Overview there are three major sections. The first section discusses ways to use the testlets:

- For *planning* course content and instructional activities;
- For *diagnostic purposes* as a unit of instruction begins;
- For *assessment at the end* of the instructional unit;
- For *on-going review* to help students revisit and strengthen understandings; and
- For helping students *learn how to respond* to multiple choice and open-ended test questions.

The second section of the document focuses on using the testlets by specific disciplines. This section includes transparency masters and discussion notes which help teachers guide students' reflection about their own learning in reading, mathematics, science, and social studies.

Through these activities, students will have opportunities to learn to "unpack" multiple-choice items and to respond to prompts which say "compare and contrast" or "explain your thinking." Discussions with these materials will assist students in reasoning through questions and answer choices as well as identifying what a question is really asking.

The final section looks carefully at answering open-ended questions. The message of these materials for students is that they must learn to read carefully and respond completely to questions that ask them to write a response. The message for educators is that students need to learn strategies along with concept development and experiences

with processes and applications. Helping students learn to be more responsible and to self-assess contributes to their overall achievement. This involves a conscious effort on the part of teachers to provide the environment and know-how for students to take a more independent role in their learning.

The materials in this booklet are designed to help students become more autonomous learners. The materials provide suggestions for successful study throughout the year and ideas that help students prepare for specific tests such as EOG, EOC, PSAT, and SAT.

About the ABCs and Classroom Assessment

The New ABCs of Public Education is North Carolina's comprehensive plan to focus on strong accountability, an emphasis on basics and high educational standards, and maximum local control. Under this plan the state monitors reading, writing, and mathematics in grades 3 through 8. At the high school level the plan includes testing in five courses (Algebra I, English I, U.S. History, Biology, and Economic/Legal/ Political Systems), an English II writing test, a comprehensive test in reading and mathematics in the 10th grade, along with several other components.

Examining the relationship between evaluation for accountability purposes (the ABCs Plan) and assessment for classroom purposes (what happens within the classroom throughout the year) sets the stage for linking teaching, learning, and assessing. Assessment for accountability purposes is developed external to individual classrooms and is uniform across the state. Classroom assessment is under the direction of individual teachers who choose the times, content, format, and scoring for the assessments.

The EOG, EOC, and other tests used in the ABCs Plan are summative. That is, they examine students' achievements of the stated goals at the end of the year. Classroom assessment, while usually summative when it relates to assigning grades, is primarily formative in nature. This is the assessment that gives diagnostic and

Purposes of Classroom Assessment

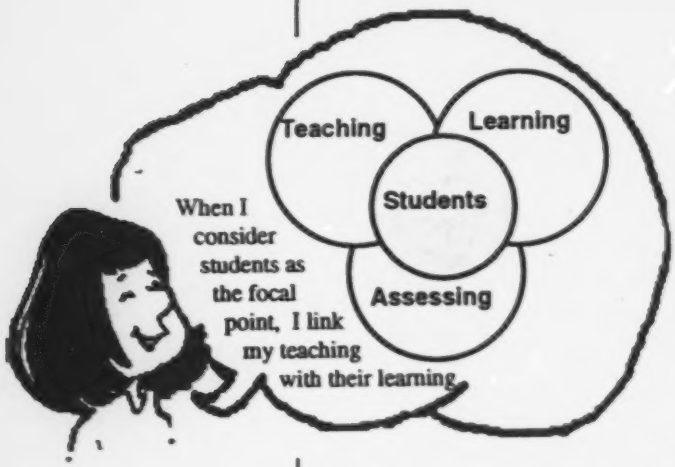
- **To diagnose learning**
  Knowing what students already understand and can do assists teachers in deciding where to begin instruction.

- **To plan instruction**
  On-going assessment gives insight into students' thinking and reasoning and informs teachers' instructional decisions. By using a variety of assessment strategies, teachers are better able to plan appropriate instruction.

- **To monitor progress**
  Assessment highlights students' accomplishments as they work toward targets.

- **To evaluate students**
  Periodically teachers must evaluate how students are progressing toward academic goals and the degree of proficiency they demonstrate. These evaluations measure both performance against standards and growth over time.

monitoring information to help teachers plan strong instructional programs and make decisions on a day-to-day basis related to the learning of individual students.



Since a primary purpose of education is to help students progress from where they are toward new goals, the *Standard Course of Study* gives the state's expectations for each grade. In every discipline, students learn basic concepts and practice applying their knowledge and skills in increasingly complex ways. School systems may also define additional goals. Thus, EOC and EOG evaluations inform a broad constituency about students' achievement relative to the stated goals in the SCS. This constituency includes school systems, the general public, the state, teachers, parents, and students.

Teachers, students, and parents are the primary audiences for classroom assessment. They are concerned with students' progress throughout the year and want more detailed information about what students are learning.

Teachers use these assessments to help them plan instruction. At the beginning of the school year or a new instuctional unit critical questions for every teacher include:

- "What do the students already know?"
- "Where is each student in relation to the targets we have set?"
- "How can I best inform the students about my expectations for quality work?"
- "Are the academic targets appropriate, clearly stated and understood by all students?"

As instruction takes place, several other questions come to mind:

- "Why do some students continue to miss the basic things they should be learning while others are making satisfactory progress?"

- "How much practice do students need in applying new skills?"
- "Do my students understand their own strengths and learning needs related to this new content?"

On-going classroom assessment gives students feedback on what they are accomplishing and what they still need to still learn. It should be designed so that students are encouraged to take increasingly greater responsibility for their own learning. Used well, on-going classroom assessment makes students partners in the process of learning.

Throughout the year and especially at grading periods parents want to know how their students are doing relative to the course or grade-level expectations. They want to know if their students are excelling and where they are having difficulties. Many parents want information about how they can help their students. Quality classroom assessment is focused enough so that teachers are able to make specific suggestions.

About the End-of-Grade Tests

While on-going classroom assessment provides useful information for students, teachers, and parents throughout the school year, the end-of grade tests are designed to provide a summative evaluation of students' overall performance related to the goals and objectives in reading and mathematics for each grade level. The tests are the same for all students across the state and are used by the state to evaluate school performance in relation to accountability goals.

The end-of-grade tests are only one source of information about a *student's achievement.* When they are used in conjunction with other evidence, they help give a picture of the student's accomplishments. Projects and products, written work, class discussions, classroom assessments and homework together give insight into the progress and achievement of individual students.

End-of-grade tests are one source of information about a student's achievement. When used in conjunction with other evidence, they help give a picture of the student's accomplishments.

The end-of-grade tests also provide *program evaluation* that is helpful when teachers and schools examine their instructional programs. By comparing their classes' goal

Performance Indicators for Achievement Levels

Level IV - Students performing at this level consistently perform in a superior manner clearly beyond that required to be proficient in subject matter and skills and are well prepared for a more advanced level in the content area.

Level III - Students performing at this level consistently demonstrate mastery of the subject matter and skills and are well prepared for a more advanced level in the content area.

Level II - Students performing at this level demonstrate inconsistent mastery of knowledge and skills in the subject and are minimally prepared to be successful at a more advanced level in the content area.

Level I - Students performing at this level do not have sufficient mastery of knowledge and skills in the subject to be successful at a more advanced level in the content area.

summaries with the performance of students in their districts and across the state for the same goals over a period of several years, teachers are able to identify strengths and areas of need in their instructional programs. Schools are able to plan professional development to address the areas of need and assist teachers at each grade level in maintaining well-balanced programs.

Students' scores are reported as scale scores and as performance levels I - IV. When rerostered, the previous year's end-of-grade scores provide information about each new class before school begins. This "holistic" use of data helps inform teachers about the general needs of the incoming class. The scores are a resource in addition to the information about students that comes from samples of students' work passed along in portfolios and summary statements by previous teachers.

About the End-of-Course Tests

End-of-course tests also evaluate the goals and objectives specified in the *Standard Course of Study*. Like the scores for the EOG tests, the scores for the EOC tests are reported in several different formats. Scale scores measure subject-specific achievement and are standardized across forms and years. Percentiles are scores which allow comparisons of achievement relative to the performance of others in the state. Scores are also compared to the levels of proficiency discussed in the next section.

Because the EOC tests are very course specific, they often serve as an exit exam. Usually students' performances on EOC tests are incorporated as a percentage of the course grade. They also can be used to conduct program evaluation.

About Achievement Levels on EOG and EOC

The various achievement levels provide an indication of how well students understand (have mastered) the content specified for a course or grade level. However, scores generated by an EOG or EOC test reflect performance on one measure and should be used in conjunction with other indicators of performance whenever decisions about students are being made. When extended to include affective as well as cognitive goals, the criteria used

in judging achievement levels of students include consistency and accuracy of performance, conceptual and skills development, applications and extensions of the content, and demonstrated levels of independence and confidence.

Descriptions of Achievement Levels

Level I

Students whose performance falls in the Level I achievement range need a great deal of focused assistance with content on which they have been tested and with new materials. They do not have sufficient knowledge and skills to be successful at the next level. These students will need additional time and experiences as new content is introduced, modified instruction to allow for mastery of previously taught material, and continuous review that links new learning with what the students already know and can do.

Level II

Performance at Level II alerts teachers that these students have incomplete understanding of skills and concepts from the previous year. They will need additional assistance in dealing with new material. Since they will also require opportunities to master some content from the previous year while they begin to study the current year's new material, they may be tentative and inconsistent in their application of content.

Level III

When students demonstrate performance at Level III, teachers expect that they are well prepared for learning the new content of that grade or more advanced course. They come to the class ready to begin work on new goals and objectives. These students continue to apply the skills and concepts they learned during the previous year consistently and accurately while they are moving forward with new experiences. They should use previous learning proficiently and independently.

Level IV

Students whose test score and other evidence of achievement are at Level IV need both enrichment and acceleration. These students should be clearly performing beyond grade level/course expectations and applying content in challenging situations. Teachers should recognize that these students must be stimulated and challenged to continue to grow. Finding out what these students have already learned in relation to the *Standard Course of Study's* goals and objectives for the new grade or course is important so that appropriate instruction can be provided.

A final word

A well-rounded, rich instructional program addresses development of concepts as well as skills. It provides opportunities for thinking, reasoning, and solving problems. It is not narrowly defined but rather encourages applications of learning, generalizations, and accuracy in all efforts. To hold the expectation that all students will be successful and perform at high levels means that all students will enjoy well-planned, effective, and continuously refined instructional programs at every grade and in every course of study.

Coming next... How to Use the Testlets

- **Using the Testlets for Planning**
- **Using the Testlets for Diagnosis before Instruction Begins**
- **Using the Testlets after an Instructional Unit**
- **Using the Testlets for Ongoing Review**
- **Using the Testlets To Learn How To Answer Questions**

Using the Testlets in a Variety of Ways

Since there are multiple items for each objective in the *Testlets*, it is helpful to consider using them in a variety of ways. This means that teachers will reserve some items for use at different times rather than duplicating all of the items and using them at one sitting.

Some items can become part of final unit tests and others could be part of informal diagnostic tests. Some items may be used to teach students how to take multiple-choice or open-ended tests. Other items could be used as a part of the on-going review when previously taught objectives are revisited to help students maintain and deepen their understandings. All of the testlet items will be helpful for teachers to review when they are planning instruction.

Using the Testlets for Instructional Planning

One of the most important uses of the *Testlets* is to help give teachers an understanding of what the learning targets look like as they are tested. While the items will not reflect all that is important for students to learn, they will give teachers a sense of the variety of ways students will be expected to demonstrate understanding of a given objective or benchmark on the EOG test.

Along with the *Standard Course of Study*, the *Testlets* can help teachers align their instructional targets with what will be tested at the end of the course or year. Knowing the types of information that are emphasized in the state's testing program is one way teachers shape instruction.

A second planning function related to defining the classroom learning targets is understanding the various ways that content can be approached. While this is true for all disciplines, it is especially critical for English

Ways to use *Testlets* for planning instruction

- Identify what are the most important learning targets related to a goal
- Identify how content (text) is approached
- Identify different kinds of questions used to test students' learning

Language Arts. For example, it is important for students to be reading throughout the year texts that are similar to those on which students will be tested. Knowing the different genre, the levels of difficulty of passages, the levels of sophistication, and the length of passages that students will work with allows teachers to schedule appropriate experiences for students in their long-term plans.

Teachers in all disciplines as well as English Language Arts also need to incorporate comprehension strategies into their plans so that throughout the year students will be able to:

Reading Skills All Students Need

- Identify appropriate reading and research strategies (metacognition);
- Find or paraphrase the main idea;
- Organize and analyze details;
- Interpret information in reference or expository text;
- Draw inferences from ideas or information in the passage;
- Define unknown vocabulary by examining context;
- Determine and examine the elements of fiction (i.e., plot, setting, conflict, characterization);
- Identify and analyze figurative language (i.e., metaphor, simile); and
- Determine and examine mood, tone, purpose, and style.

Another function of the *Testlets* in instructional planning is to allow teachers to examine the many ways that questions can be formulated related to an instructional goal. Both multiple-choice and open-ended questions are part of the resource, and teachers gain ideas about what is expected as an appropriate response to different prompts.

An example from eighth grade reading

An analysis of the eighth-grade reading testlets provides helpful information for language arts teachers. Each kind of information has implications for planning.

There are three main catagories of passages: literary, content, and consumer. Within the *literary* passages there are

Types of text

narratives, biographies and autobiographies, lyric and narrative poetry and drama. *Content* passages have information from science (including charts and graphs), social studies, mathematics, the arts, and healthful living. *Consumer* selections are informational text and those which give directions (i.e., recipes). Students need to have opportunities to read all of these types of text throughout the school year; they should learn to read to gain information, to perform tasks, and for pleasure.

Level of difficulty

The *Testlets* have been rated from easy (EA) to medium (MA) to difficult (HA). Passages vary in these ways:

- From short sentences and paragraphs with vocabulary words that are simple and/or high frequency to longer sentences and paragraphs with more complex vocabulary;
- From factual text with little information to more conceptual text with a great deal of information to process; and
- From straightforward prose or narration to text that incorporates references, quotations, italics, and figures of speech.

Students need opportunities to read various levels of text. They need instruction in how to read for concepts and ideas as well as for information and facts. Direct instruction and then multiple opportunities to "reason out" what a vocabulary word may mean from content clues and from comprehending the ideas of the text are also important.

Length of passages

Most passages in the eighth-grade testlets are less than two typed pages, with some less than one page and a very small number less than three pages. Research in comprehension indicates that longer pieces of text can be easier to read because the reader has more information and more context clues to use to reason out meaning.

What makes longer text seem more difficult to students is their fear of long passages, their lack of patience and persistence in reading on and rereading when they become confused, and their inexperience in reading long passages. Lots of practice and "guided reading" through longer passages will give students strategies and the confidence they need.

Types of questions

The types of questions vary with the difficulty of the passage, with *easy* passages having more knowledge and organizing questions and *hard* passages having more analyzing, generating, and evaluating questions. Overall, the most frequent types of questions are organizing, analyzing, generating, and finally evaluating.

Are your students answering all levels of questions (from knowledge, organizing, applying to analyzing, generating, integrating, evaluating) both orally and in written form? This is crucial for good comprehension! Monitor and analyze carefully the kinds of questions you ask orally and the kinds of questions students respond to in writing. If you are currently asking primarily factual, knowledge questions, incorporate more high-order questions into your plans.

English Language Arts goals

Three goals of the English Language Arts curriculum are assessed in the eighth-grade reading EOG– Goal 1, Goal 2, and Goal 3 (see chart below). Goal 4 addresses personal and aesthetic use of language. Even though it is not assessed on the EOG, it should be addressed in daily plans and is assessed through open-ended assessments because it is essestial to a fully competent reader who comprehends and enjoys reading.

Goal 1: The learner will use strategies and processes that enhance control of communication skills development.

- What type of information would be most helpful in reading this passage?
- What kind of knowledge will be most useful in reading this type of passage?
- How does the author get the reader's attention in the introduction?

Goal 2: The learner will use language for the acquisition, interpretation, and application of information.

- The poem is mostly about which of the following?
- What kind of conflict is there in this passage?
- What is the most important idea in the text?

Goal 3: The learner will use language for critical analysis and evaluation

- How does the author convince you of...?
- How does the author foreshadow the idea that...?
- What could the author have done to make the passage more informative?
- What is the author's attitude toward...?

Goal 4: The learner will use language for aesthetic and personal response

- What experiences would probably help you understand...best?
- Were you surprised by...?

Writing responses to open-ended questions

The following example shows how study of the context, approaches, and wording of open-ended questions in the *Testlets* helps teachers plan.

When teachers know the kind of words used to formulate questions and the required responses for a top score, they can incorporate instruction that assists students in preparing strong responses no matter what discipline is involved. This explicit instruction helps students achieve at higher levels by giving them a clear picture of what the test question is asking them to do.

Currently, many students are unable to differentiate among the processes called for in open-ended questions. Almost always the directives in the prompts require students to take different approaches in developing appropriate responses.

- describe
- explain
- compare
- summarize
- analyze
- conclude
- evaluate
- predict

Students often interpret all of these words to mean the same thing – "Tell me about..." or "Relate all that you know about...." It is a revelation for most students that the thinking used in formulating the answers and the writing process involved in communicating their ideas should be different.

Consider an open-ended question that asks students to *evaluate* something. In order to evaluate, students need first to be very clear on what is being evaluated. Next they need to decide the criteria that would be most appropriate to make an evaluation. Making a list of criteria is a helpful strategy for organizing and clarifying what is important. A third step is to apply the criteria to the situation, thinking of examples or reasons for how and why these criteria apply. Finally, students judge the situation using the criteria and make a final evaluation. Their conclusions come from application of the criteria to the specific

Thinking Skill Levels

Each testlet item has been classified by thinking skill levels adapted from *Dimensions of Thinking: A Framework for Curriculum and Instruction* by Marzano, Brandt, Hughes, Jones, Presseisen, Rankin, and Suhor (1988).

- *Knowledge - focusing; information-gathering, and remembering skills*
- *Organizing - arranging information so that it can be used effectively*
- *Applying - demonstrating prior knowledge within a new situation*
- *Analyzing - clarifying existing information by examining parts and relationships*
- *Generating - producing new information, meaning, or ideas*
- *Integrating - connecting and combining information*
- *Evaluating - assessing the reasonableness and quality of ideas*

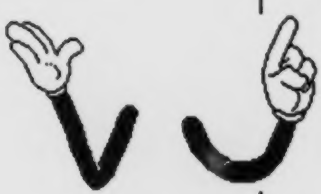
situation so that the reader is clear on how the students arrived at their conclusions.

Within the instructional program, teachers need to provide opportunities for students to practice the different kinds of thinking and reasoning. At times students can respond orally as well as by practicing written communication of their ideas. Try these or other examples:

To understand how critical the establishment of criteria is when you are asked to evaluate, brainstorm and then discuss as many varied criteria as you can for these:

- **a good driver**
- **a good speech**
- **a strong economy**
- **a strong military leader**
- **a good waiter or waitress**
- **a powerful editorial**

Use your criteria to evaluate a specific example.



Describing involves naming attributes, but comparing involves using the attributes to tell how things are alike and how they are different.

1. **Describe the life of a settler in western North Carolina in 1800.**

2. **Compare the major differences in subsistence farming and commercial farming.**

One caution is appropriate. The *Testlets* are designed to be one of many resources used by classroom teachers. They are not an instructional program, nor do they model all that students should know and be able to do related to the goals and objectives of each content area. Real-world applications often arise in complicated situations and almost always require an integration of knowledge. Instruction and assessment in every classroom should provide students opportunities to learn through numerous, varied activities and multiple assessment formats.

Using the Testlets for Diagnosis before Instruction Begins

Diagnosis is not a new idea in education, nor is it a simple task. It is a recursive process in which teachers gather information about what their students know and understand in order in make plans and then adjust the plans as more information becomes available.

Taking time to diagnose what students already know means that teachers will be better able to make instructional plans that fit the strengths and needs of the class. Placement into instructional groups arises from diagnostic tests and informal, observational assessments. With specific diagnosis that is related to an instructonal unit that is about to begin, teachers gain knowledge about the students that allow them more appropriately to challenge and support individual learners.

Do you need more time in your instructional program?

Rather than beginning with review, start with what is new and difficult for students to learn.

Build review into your lessons as students need the knowledge or skills to be successful with the new content.

At every grade and in every course there are important instructional goals. In order to have time to accomplish these goals, teachers need to begin each new school year with instruction on the new content. Review and remediation need to be woven into daily lessons as student performance indicates the need rather than taking days, or even weeks, to review what students were supposed to have learned the previous year.

By beginning major units with a diagnostic assessment, teachers identify specific objectives which students already meet and those which will require in-depth study. As instruction proceeds, on-going assessment serves to inform teachers of students' accomplishments and provide new diagnostic information for the "next steps." On-going assessment also gives students more current feedback about how they are doing and what they need to focus on next.

To keep the process of continually pretesting from becoming a burden, teachers can assemble more formal diagnostic tests which will guide their planning over several weeks or for an entire grading period. If there is more than one teacher at a grade level or teaching the same course, they can create assessments together as they clarify their instructional goals and the anticipated performances of students that will indicate high achievement.

Some teachers construct the end of unit evaluations and their diagnostic tests at the same time, making parallel assessments.

Deciding what questions to use in a diagnostic test begins with identifying what students should be able to do, to understand, and to explain at the end of the instructional unit. The more specific a teacher is about the ultimate goals of the unit, the more focused instruction can become. (And the more clearly teachers can describe what the learning targets are and what accomplishment of these targets in a quality performance looks like, the more students can take responsibility for monitoring their own progress toward the goals.)

Many teachers focus on the components of larger tasks and use diagnosis to determine which parts of their unit of instruction students already know. They also determine what objectives students need to work on. By using items from the *Testlets* as part of the diagnostic test along with questions that come from textbooks or other resources, teachers are introducing students to one traditional way that learning is assessed. Since testing is itself a learning process, students gain an idea of what will be expected of them as they demonstrate their mastery of skills and concepts.

An example from fifth-grade mathematics

Let's follow the steps for creating a diagnostic test for a fifth-grade mathematics unit which focuses on decimals. This unit might last for six weeks because it will include decimal concepts and operations along with a review of number facts, mental computation (daily 5-minute math), whole number operations, and problem solving strategies as they are applied in activities and problems in the unit.

First, identify the new goals to be addressed. The

Standard Course of Study indicates that by the end of this unit, students will be able to

- Read, write, and use decimals in a variety of situations including graphical displays and real-life problems;
- Compare and order decimals in realistic situations through thousandths;
- Relate decimals to fractions, both with models and at symbolic levels;
- Compare whole number remainders and decimal remainders;
- Compute sums, differences, and products using decimals;
- Make reasonable estimates using decimals; and
- Compute averages.

In grade 4 students modeled tenths and hundredths and compared common fractions and decimals. They studied

Developing and using diagnostic tests

1. Decide upon the goals and objectives you want to accomplish and the criteria for determining if students have achieved these goals at the end of the project, unit, or grading period. Be specific.

2. Identify what you want to know about the students' understandings of this content and decide how to gather this information. Consider simultaneously creating both pre- and post- assessments to match the desired outcomes. Remember to include what is important for students to learn, not just what is easy to assess.

3. Create a diagnostic tool that gives you the most information and fits your goals and expectations for the students. Use your old tests, textbooks, and the testlets as sources of questions. Include similar questions on both pre- and post- assessments.

4. As you evaluate the students' performance, involve students in setting specific learning goals for the coming weeks. They can set class targets as well as individual ones. Be prepared for students who need extensions as well as remediation.

decimals as an extension of the base 10 system. These understandings need to be assessed along with questions from the fifth-grade expectations.

While a pencil and paper assessment alone may not provide indepth information, it will serve as a starting point for instruction. Teachers will be able to plan for total class discussions and create flexible groups according to students' strengths and needs.

Diagnostic tests are given to find out what students know before instruction begins. They are not for assigning grades.

Keeping the diagnostic assessment a manageable length can be a challenge. Teachers need enough questions to give an accurate indication of students' understandings, but not so many questions that students become discouraged. There needs to be a variety of question formats and probing questions. Some questions can come directly from the *Testlets*, but teachers need to include short answer questions, performance tasks, and open-ended items.

The next step is to assemble questions which relate to the goals and objectives of the unit. Textbook exercises, unit tests from textbooks, teacher-made tests used previously in the classroom, and testlet items are resources for creating the assessment. Planning with another teacher and creating a posttest at the same time the diagnostic test is being written are strategies for increasing the quality of your instruments and saving time in the long run.

A sample diagnostic test for fifth grade, including some questions from the testlets, starts on the next page. Since decimals are a major focus in fifth grade, this diagnostic test is longer than others might be. What is important is that there are sufficient questions related to the content that is to be taught to give a picture of what students already know.

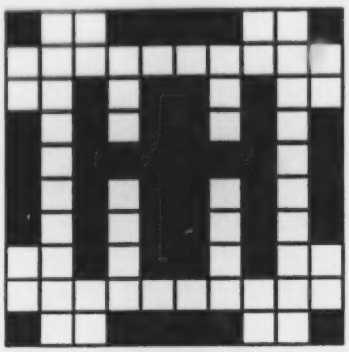
After students have completed the assessment, there remains the task of making sense of the students' responses. Examine the results in a holistic manner.

- Are there some students who are already knowledgeable of a great deal of the content you are planning to teach? What learning targets do they still need to work on? What extensions and enrichment will you be able to provide?

Decimal Pretest

Name _____

In the next few weeks we will be studying decimals. This pretest will help identify what you already know and what we need to study some more. Do your best, but do not worry if you do not know the answer. You will be learning a great deal about decimals and using them in many ways throughout this year.

1. 

What decimal number is represented by the shaded portion of this 10 by 10 grid?

_____

2. What decimal is equivalent to one half?

_____

3. Write three decimal numbers that are between 2 and 3.

_____ _____ _____

4. Write the decimal equivalent for each fraction given below.

$\frac{3}{4}$ _____ $\frac{1}{10}$ _____

$\frac{2}{5}$ _____ $\frac{2}{25}$ _____

5. Circle the largest decimal in the list below.

0.4 0.049 0.04 0.45 0.398

6. What is the total shipping weight of these three boxes?

56.8 lb	172.4 lb.	84.09 lb.

_____

6. Mr. Royal, the librarian, mailed a package of books that weighed 3.6 pounds. Which ***best*** describes this weight?

A less than 3 pounds

B between 3 and 3.5 pounds

C between 3.5 and 4 pounds

D more than 4 pounds

7. At the local puppet theater, the rows of seats are 72 feet long. Each seat occupies 2.25 feet. How many seats are in each row?

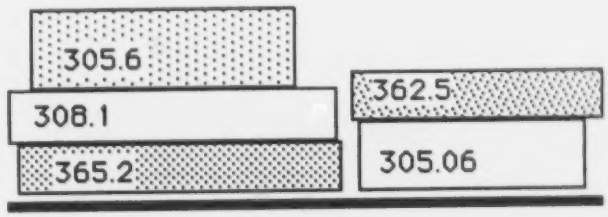
A 28

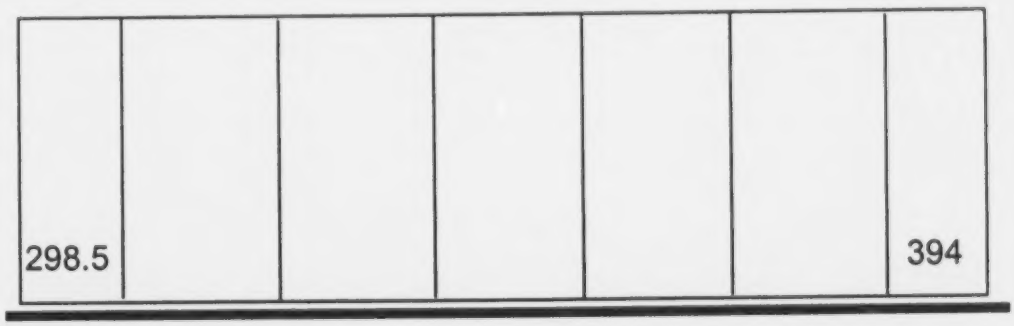
B 32

C 36

D 40

8. These books have been left on the table. Show how they will be arranged on he library shelf. "Books"have been drawn for you.





9. Four fifth graders bought new shoe laces. The first bought laces 36 in. long. The second bought laces that were 20 in. long. The third's laces were 30 in. long and the fourth purchased laces that were 24 in. long. What was the average length of shoe laces? Show your work.

10. Which number represents the largest quantity? Circle the correct answer.

A	0.563 g	B	0.57 g
C	0.4062 g	D	0.0719 g

11. Ted needs to deliver birthday invitations to his friends today. Which of his friends lives farthest away? Circle the correct answer.

A	Sandy: $\frac{3}{5}$ of a mile	B	Annie: $\frac{7}{10}$ of a mile
C	Paul: 0.55 miles	D	Kim: 0.8 miles

Explain how you compared these distances.

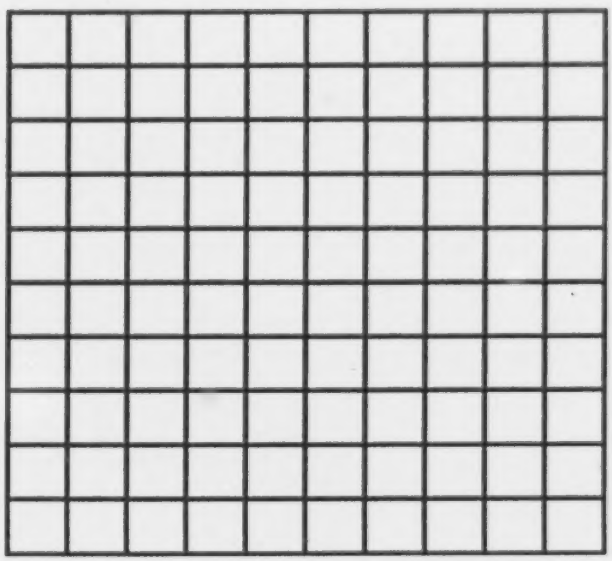
12. Chose four colors and complete the key below. Then create a design on the grid at right in which

.3 is shaded _____

.16 is shaded _____

.28 is shaded _____

.06 is shaded _____



• Based on the assessment and your observations and discussions, are there some students who have very little conceptual understanding and who are likely to need additional assistance throughout your unit? What experiences do they need as a foundation for your instructional unit? Did your assessment give you any surprising information?

Using the *Testlets* as a resource for questions to accompany your teacher-made items on a diagnostic test saves time and gives students an opportunity to learn to respond to questions in different formats.

Using the Testlets after an Instructional Unit

One current, frequent use of the *Testlets* is as part of an assessment at the end of an instructional unit. Since the manner in which teachers organize and present content varies, teachers can customize their assessments by using some of the items from all of the objectives that were part of their unit. Combined with short answer and performance tasks, the multiple-choice and open-ended questions give students opportunities to demonstrate their learning in different pencil and paper formats.

Using the Testlets for Ongoing Review

Another use of the *Testlets* is to assist in review later in the semester or year. By using some, rather than all, of the items related to an objective at one time, teachers will have items to use in review throughout the school year. This is especially helpful for content taught early in the year, since students need opportunities to revisit and reinforce concepts and processes.

Testlets are least effective when students use them only at the end of the year or course to practice for the tests.

Perhaps the least effective use of the *Testlets* is to wait until the end of the grade or course and reproduce page after page simply to practice for the tests. It is far more powerful to use items throughout the year so that any learning that takes place using this resource is more likely to go into long-term memory rather than short-term memory. When students practice without feedback, they often continue to make the same mistakes. Telling them how

many items they missed without discussing why the items were missed may result in their repeating the same pattern of mistakes. While review near the end of the year or course is important, review is most powerful when it is ongoing and is accompanied with discussion of the content.

An example from sixth-grade science

One objective in sixth grade science (6.4) is for students to investigate the basic characteristics of heat, light, and sound.

Further explanation of the objective in the *Standard Course of Study* states that students should perform experiments to determine basic characteristics of heat, light, and sound. Sample topics include reflection, refraction, transmission, insulators, conductors, expansion, contraction, change of state, and the light spectrum.

In the sixth-grade *Testlets* there are twenty multiple-choice items for this objective. Since it is a broad objective, teachers could choose those items which relate to their instructional plans as part of a diagnostic assessment, at the end of the instructional unit, and in later reviews.

For example, on the next two pages four multiple-choice items from objective 6.4 are pictured. In planning for the instructional unit that would include part of the content from this objective, teachers might decide to use item 3 as part of a pretest. Items 6 and 7 might be part of the posttest and item 4 could be used later in the year as part of a review.

The correct answers are shown with the examples on the following page. As a reference in case you decide to block out the answers and have students respond to the questions, the answers are D for item 3, answer B for item 4, answer A for item 6, and answer A for item 7.

While classroom assessment provides information for teachers in their planning, it also creates new dilemnas.

That is, the more teachers know about their students, the more they recognize the broad range of understandings and skills their students bring to the class.

Teachers also recognize the need for conceptual understanding and reasoning, not just skill in applying rote processes.

3. **Metal tacks are attached to a straightened metal coathanger with candle wax at 2" intervals. The end of the hanger is then held in a candle flame.**

Which tack would you expect to drop off ***last***?

A 6

B 4

C 2

D 1

Sample pretest question
Correct answer is D.

Use the following information to answer questions 6 (below) and 7 (see next page).

A drop of blue food coloring is placed in a cup of cold water and another drop is placed in an identical cup with an equal amount of hot water.

6. Which statement correctly describes what will happen to the drop of food coloring?

A spread fastest in warm water

B spread fastest in cold water

C spread at the same rate in both cups

D spread fast, then slow in warm water and the opposite in cold water

Sample posttest question
Correct answer is A.

Continued from the previous page.

7. What variable controls the spreading rate?

A speed of the water molecules

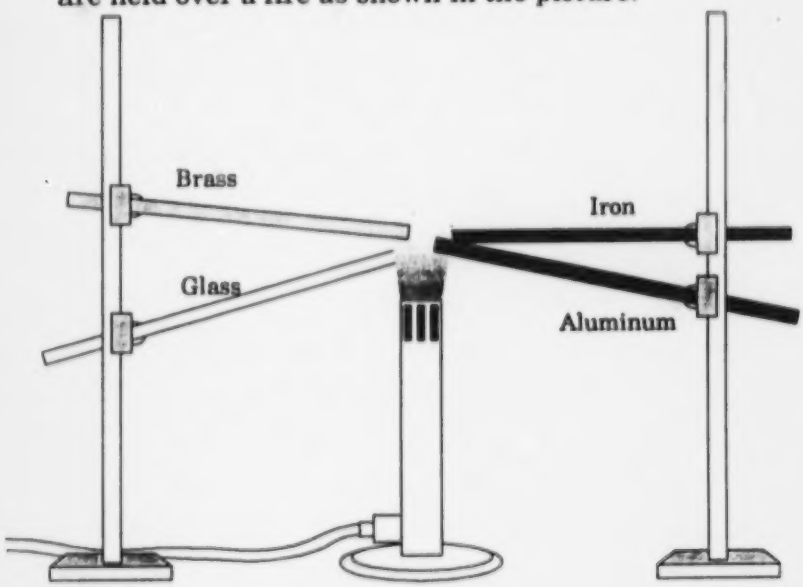
B density of the food coloring

C amount of water in the cup

D number of drops added

Sample posttest question
Correct answer is A.

4. Four rods of the same size, but made of different materials, are held over a fire as shown in the picture.



When will the heat be felt at the far end of the four rods?

Sample review question
Correct answer is B.

A at about the same time, because each material conducts heat at the same rate

B at different times, because each material conducts heat at a different rate

C at the same time, except the glass rod which will not conduct heat

D at the same time, except the iron rod which will not conduct heat

Additional Information about Each Item

In *Testlets* there is specific information about each multiple-choice item–the related goals and objectives, the difficulty level, the thinking skill category, and the correct response. There is also a general rubric for scoring the open-ended questions.

Using the Testlets to Learn How to Answer Questions

In the section that follows there are transparency masters and teacher notes for "unpacking" items from the grades 3-8 *Testlets* in Science, Social Studies, Reading, and Mathematics. There are also examples from the English I, U.S. History, and Algebra I *Testlets*. These examples are intended to help with class discussions during which students reason their way through the possible answers to select the correct choice. Since these are only samples, teachers may wish to select other *Testlet* items to use throughout the school year in a similar manner.

Getting Started...

Work with other teachers at the same grade level or teaching the same course–share ideas and the work load.

1. Identify and prioritize content goals from the *Standard Course of Study*. Plan instructional and assessment activities at the same time, and use these content goals to guide that planning.

2. Locate the *Testlets* that are appropriate for your instructional goals and create additional items (multiple choice and open-ended questions, short answer, performance tasks, and products) to assess these goals.

3. Choose items for pretests, posttests, and ongoing review. Save time by planning these together. Note: good questions could be used for more than one purpose.

4. Continue collaboration with colleagues to plan instructional activities as you gain understanding of students' thinking and monitor their progress toward achievement of these content goals.

Unpacking Multiple Choice Items

It is important to teach the complex reading and thinking processes that students need to perform well in all academic endeavors as well as on statewide tests. Students need numerous examples of how to reason out answers to questions. They also need constructive feedback and opportunities to hear other points of view.

As students learn metacognitive strategies that help them monitor their own thinking, they will be better able to respond to written questions in all content areas. Differentiating main ideas from details, recognizing purpose and learning to make inferences, figuring out meanings of unfamiliar words from the context, reading for information, and recognizing when problems require multiple steps to solve them are skills that all students can develop through guided practice.

In this section there are transparency masters featuring sample items from many of the *Testlet Item Banks*. These are examples of ways the *Testlets* might be used to help students learn to "unpack" multiple-choice questions. This "unpacking" involves discussions related to clarifying the questions being asked, eliminating inappropriate choices, and choosing the "best" answer. The examples are not all-inclusive but are designed to illustrate how teachers might create additional examples that more closely fit their students and content that they are teaching.

This section is organized with transparency masters first, followed by discussion notes to guide the class in "unpacking" the examples. While the content is from science, social studies, mathematics, and English language arts testlets, teachers will find that the nature of the examples lends themselves to use across disciplines. The thought processes to "unpack" a social studies item, for example, may be helpful in thinking through a reading question.

Unpacking the Testlets

Colonial assemblies are to state legislatures as town meetings are to which of the following:

A county courts

B county sheriffs

C town councils

D town laymen

How would you approach answering this question?

Transparency master: History/Social Studies example 1

Unpacking the Testlets

Which freedom allows a student to wear a button to school urging people to vote for a certain presidential candidate?

A freedom of speech

B freedom of press

C freedom of religion

D freedom of assembly

What do you know about each of these freedoms that would help you to answer the question?

Transparency master: History/Social Studies example 2

Unpacking the Testlets

What Asian country is described in the box?

Located south of the Himalaya Mountains in the low latitudes, and sometimes called a sub-continent, this country's major physical features include the Northern Plain and the Deccan Plateau.

A China
B Japan
C India
D Vietnam

How would you approach answering this question?

Transparency master: History/Social Studies example 3

Unpacking the Testlets

Which would be a merchant's main consideration when deciding where to settle during early colonial times?

A climate

B soil

C landforms

D rivers

What words do you need to understand to answer this question?

Transparency master: History/Social Studies example 4

Unpacking the Testlets

A mayor is the most similar to which of the following?

A a legislator

B a governor

C a judge

D a police officer

What do you know about the jobs that each of these people do that will help you answer the question?

Transparency master: History/Social Studies example 5

Unpacking the Testlets

If Quito, Ecuador, is located near 0° latitude, which other statement would describe its location?

A **Quito is located near the Tropic of Cancer**

B **Quito is located near the Prime Meridian**

C **Quito is located near the equator**

D **Quito is located near the Tropic of Capricorn**

What do you know about longitudes and latitudes?

Transparency master: History/Social Studies example 6

Colonial assemblies are to state legislatures as town meetings are to which of the following:

A county courts
B county sheriffs
C town councils
D town laymen

How would you approach answering this question?

History/Social Studies example 1 (page 28):

On this transparency students are asked about the approach they might take in solving the problem. Other leading questions could be

- What pattern do you see?
- Is anything being compared?
- How would you describe colonial assemblies? (governing bodies of the colonies)
- What are state legislatures? (governing bodies of the states)

Discussion: This question is an analogy, and students need to understand that they are looking for a relationship or pattern such as part to the whole or the cause to the effect. If necessary, you may need to talk further and give a few examples of analogies and discuss them, such as

- Leaves are to trees as fingers are to hands.
- A fish is to water as a bird is to air.
- A photographer is to a camera as a carpenter is to a hammer.
- Sandpaper is to rough as water is to wet.

In this specific question, the analogy connects colonial assembles to state legislatures, both of which are governing bodies or organizations. A town meeting is also a body or organization, so it is probably being compared to a similar form, not to specific persons. Therefore, we could eliminate answers B and D.

Colonial assemblies were governing bodies for colonies, while state legislatures are governing bodies used today. A town meeting was a popular form of decision making for local government in the colonies, while town councils are popular forms today for local government.

Therefore, the answer is C.

History/Social Studies example 2 (page 29):

The students are invited to begin unpacking this item with the question, "What do you know about each of these freedoms that would help you to answer the question?"

During the discussion students should eliminate answers C and D, since the right to express an opinion about a presidential candidate does not involve religion or the right to congregate with others. Although the button is printed, it is not a publication, so they can eliminate B. In announcing support for a candidate, either by a button or orally, students would be expressing an idea or opinion, so the correct answer is A.

Which freedom allows a student to wear a button to school urging people to vote for a certain presidential candidate?

A freedom of speech
B freedom of press
C freedom of religion
D freedom of assembly

What do you know about each of these freedoms that would help you to answer the question?

Extension: Ask students to create and respond to other questions that might have these same answer choices.

History/Social Studies example 3 (page 30):

This is an example of a test question that requires students to have some factual information. The transparency prompts students to suggest a way to begin: "How would you approach answering this question?" Because of the reference to the Himalaya Mountains, students should recognize that the question requires them to think about what they know about the geography of Asia.

Students can begin by identifying the location of each country. China is a large country in northeast Asia. Japan is a small island nation located off the east coast of Asia in the Pacific Ocean. India is a large country in south Asia. Vietnam is a small country in southeast Asia.

What Asian country is described in the box?

Located south of the Himalaya Mountains in the low latitudes, and sometimes called a sub-continent, this country's major physical features include the Northern Plain and the Deccan Plateau.

A China
B Japan
C India
D Vietnam

How would you approach answering this question?

Students might reason that China and India are the only two answer choices large enough to be considered

sub-continents. Also, Japan and Vietnam both have a lot of mountainous terrain and would be less likely to have a plain or a plateau as a major feature. Considering these facts, B and D could be eliminated.

Vietnam and India are closer to the equator than China and Japan are, so they are in the low latitudes. This eliminates A (China) as a possible answer. India is south of the Himalaya Mountains, is in the low latitudes, and is large enough to be considered a sub-continent. Therefore, India (answer C) is the correct answer.

History/Social Studies example 4 (page 31):

To approach answering this question, students should think about what a merchant needed in order to be successful during early colonial times. (If students have trouble getting started with the discussion, you may wish to ask them "What do merchants need today to have a successful business?" and "How would a merchant's needs in colonial times be different from today?")

Which would be a merchant's main consideration when deciding where to settle during early colonial times?

A climate

B soil

C landforms

D rivers

What words do you need to understand to answer this question?

In colonial times merchants made their living by purchasing goods for resale to others. They often operated shops or stores. In order to purchase goods, merchants were dependent on suppliers. The merchant needed to be located where he could easily have suppliers of goods and customers reach his shop. Rivers would provide a means of transporting goods for both suppliers and consumers, so D would be a possible answer. But is it the best possible answer?

Students should consider the relative importance of each other choice to a merchant. The climate would have some affect on business, so A could be a possibility. The soil would be more important to a farmer than a merchant, so B could be eliminated. Landforms are physical features that relate to shape, form, or the nature of the earth's surface, such as hills, mountains, and valleys. Some landforms, such as mountains could pose problems for merchants if they isolated merchants from suppliers or potential customers.

However, of the four choices listed, rivers would be a merchant's main consideration when deciding where to settle because transportation, or the movement of goods, would be a primary concern. This makes D the best choice.

History/Social Studies example 5 (page 32):

In this question students are asked to identify similarities. The question on the transparency invites students to describe the roles and responsibilities of each person. Ask students if they see a pattern or any common attributes. For example, a mayor is the elected head of a city or town and is responsible for governing. There is only one mayor in a town. A police officer, however, is not elected. Also, police officers are responsible for arresting persons who do not carry out laws. What are the roles of legislators? ... of governors, ... of judges?

A mayor is the most similar to which of the following?

A a legislator
B a governor
C a judge
D a police officer

What do you know about the jobs that each of these people do that will help you answer the question?

Notice that a governor, like a mayor, is elected and is head of the state. Governors are also responsible for governing. States have only one governor.

Students can double check the answer by examining and eliminating the other answers: A legislator is one of many elected state officials who govern; a judge may or may not be elected but a judge does not govern; a police officer is not elected and does not govern.

History/Social Studies example 6 (page 33):

The transparency poses a general question to help students get started: "What do you know about longitudes and latitudes?" In the process of brainstorming, students are likely to discuss the the Prime Meridian, the Equator, and the Tropics of Cancer and Capricorn.

If these terms do not come up in the discussion, help students unpack this question by reviewing the definitions of the terms latitude, Tropic of Cancer, Prime Meridian, and so on.

If Quito, Ecuador, is located near 0° latitude, which other statement would describe its location?

A Quito is located near the Tropic of Cancer

B Quito is located near the Prime Meridian

C Quito is located near the equator

D Quito is located near the Tropic of Capricorn

What do you know about longitudes and latitudes?

Students' thinking might go like this: All these terms relate to imaginary lines on maps and globes. Lines of longitude measure distances east and west, but the lines run north and south. Longitude lines come together at the North and South Poles. This means that they are not parallel (the same distance apart).

Lines of latitude measure distances north and south of the equator. The equator is the imaginary line halfway between the North Pole and South Pole. It runs around the middle of the earth and divides it into the northern and southern hemispheres. The equator line is marked 0°.

One strategy in answering multiple-choice questions is to look for answers that appear correct because of given information or prior knowledge. Then students must check other answer choices to see if there is another answer that would be more appropriate. In this question, knowing about the equator is the information students need to find the correct response. Knowing the other geography terms allows students to eliminate them as possible answers.

If Quito, Ecuador, is located near 0° latitude it should be near the equator; therefore, C would be the correct answer. Let's double check the answer, and eliminate the other choices. The students' lines of reasoning might be the following: The Prime Meridian passes through Greenwich, England. England borders the Atlantic Ocean and Ecuador is on the Pacific coast of South America; therefore, B is not the answer.

The Tropic of Cancer and Tropic of Capricorn are both parallels, or imaginary lines of latitude. The Tropic of Cancer is located at 23 1/2°N latitude and the Tropic of Capricorn is located at 231/2°S latitude. If Quito is 0° latitude, it is not near either of these so A and D can be eliminated also. Therefore, C remains the best answer.

Science examples begin on the next page.

Unpacking the Testlets

Until a few years ago, scientists believed that certain plant-eating dinosaurs did not live as far north as North Carolina. While digging an area for a new highway, fossils of these dinosaurs were found.

Just recently, while studying the life in a saltmarsh, a scientist discovered what may be a new kind of fish.

What do these two discoveries tell you about science?

A **Scientists keep things secret for us to learn when we are ready.**

B **Scientists of today are much smarter than those of the past.**

C **Scientists know that scientific knowledge is always changing.**

D **Scientists always tell us things that are not true in their books.**

Transparency master: Science example 1

If people waste too much water, what is most likely to happen?

A **The oceans will slowly dry up.**

B **There will not be enough rain for crops.**

C **There will not be enough water for drinking.**

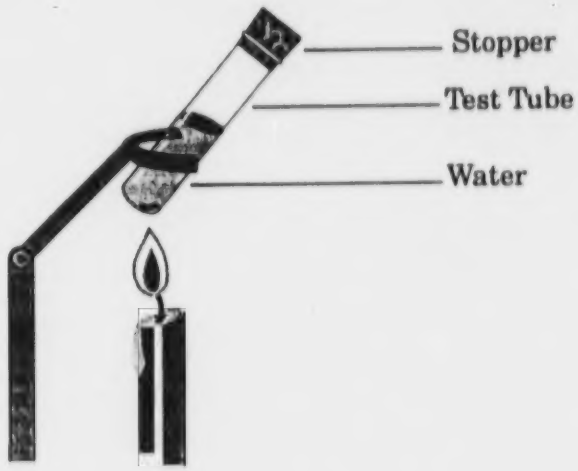
D **Most of the rain will be acid rain.**

What could cause each of these answer choices to happen?

Transparency master: Science example 2

Unpacking the Testlets

Water is heated as shown in the diagram.



If the stopper pops out, what might be the reason?

A The air in the test tube absorbs heat and contracts.

B The stopper gets hot and expands.

C Some of the water is changed into steam.

D The glass test tube expands more than the stopper.

Transparency master: Science example 3

For centuries, scientists believed that light could suddenly appear from nowhere. Then they discovered that light travels away from its source. What does this tell you about science?

A Once a fact is known it will always be true.

B Scientists should study more carefully.

C Only new science ideas should be believed.

D Science ideas do not always stay the same.

Unpacking the Testlets

Emily wants to determine the effect of mixing liquid A with liquid B. In the lab, she has standard chemistry equipment (beakers, flasks, Bunsen burners, etc.) and the lab's library has science books and journals.

In one scientific journal, Emily discovered that a chemist has already created this reaction. The chemist's results indicate that mixing 30 mL of liquid A and 60 mL of liquid B results in 5 mg of precipitate. What action should Emily take?

A **Do not repeat this experiment because the results are already known.**

B **Attempt to repeat the experiment in an effort to confirm or refute its results.**

C **Use the experiment as a guide to perform a different but related experiment.**

D **Assume that the results are accurate and use them to design a new experiment.**

Transparency master: Science example 5

Until a few years ago, scientists believed that certain plant-eating dinosaurs did not live as far north as North Carolina. While digging an area for a new highway, fossils of these dinosaurs were found. Just recently, while studying the life in a saltmarsh, a scientist discovered what may be a new kind of fish. What do these two discoveries tell you about science?

A Scientists keep things secret for us to learn when we are ready.

B Scientists of today are much smarter than those of the past.

C Scientists know that scientific knowledge is always changing.

D Scientists always tell us things that are not true in their books.

If people waste too much water, what is most likely to happen?

A The oceans will slowly dry up.

B There will not be enough rain for crops.

C There will not be enough water for drinking.

D Most of the rain will be acid rain.

What could cause each of these answer choices to happen?

Unpacking the Testlets: Teacher Notes for Science

Science example 1 (page 39):

Scan all of the answer choices. When you can, eliminate one or more of the answer choices as you carefully consider the other options.

Since scientists "believed" that certain dinosaurs did not live in North Carolina and since a scientist "discovered" the new kind of fish, we know that they were not keeping secrets or telling things that were not true. This helps to eliminate answer choices A and D.

Throughout recorded history, scientists have made new discoveries based upon what was known and their new findings. In the past scientists were not less intelligent (smart) than current scientists; many of their discoveries are still being used today to build upon.

The correct answer is C because science knowledge does change as new information is discovered.

Science example 2 (page 40):

Make sure that the question that you answer is the question that is being asked. This question asks about the consequences of wasting water.

When people waste water, the immediate consequence is on their water source, which is usually a reservoir or a well. That shortage would not have an effect on the ocean (eliminate A) or on the amount of rainfall (eliminate B). It would not cause acid rain, which is caused by pollution (eliminate D).

Therefore, the answer is C, because it could cause a water shortage for drinking.

Science example 3 (page 41):

Whenever a question is accompanied by a picture, diagram, graph, or chart, students need to learn to take a few minutes to study the graphic carefully and ask themselves "What do I know from looking at this?"

Pose the question of "What do you know from looking at this diagram?" to the class. Before reading the answer choices, ask students to talk about what is likely to happen and to hypothesize a response to the question posed on the transparency. (This may have come out in response to the first question.)

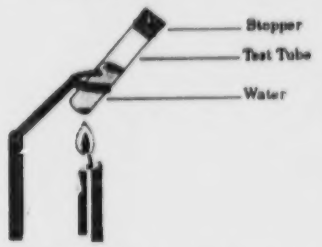
This example is a good one to use as you talk about eliminating obvious incorrect answers. For example, in answer choice B, if the stopper got hot and expanded, it would not be likely to pop out as the question states. In fact, it would be stuck more tightly.

Why is answer D not logical? (If the test tube expanded, the stopper would be more likely to slide inside rather than pop out.)

Answer A, at first, glance, seems like a possibility. The air in the test tube will absorb heat when the tube is held over a burning candle. But that air will expand rather than contract (as the answer states) as it is heated. If the reasons had just said that the air in the test tube absorbs heat, then this would be a possible answer since the heated air would expand, helping to push the stopper out.

This leaves answer choice C. Some of the water is likely to change to steam as it is heated and that steam pressure would pop the stopper out of the tube.

Water is heated as shown in the diagram.



If the stopper pops out, what might be the reason?

A The air in the test tube absorbs heat and contracts.

B The stopper gets hot and expands.

C Some of the water is changed into steam.

D The glass test tube expands more than the stopper.

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For centuries, scientists believed that light could suddenly appear from nowhere. Then they discovered that light travels away from its source. What does this tell you about science?

A Once a fact is known it will always be true.

B Scientists should study more carefully.

C Only new science ideas should be believed.

D Science ideas do not always stay the same.

Science example 4 (page 42):

This is an example of a science question that depends a great deal on careful reading. Thinking about the information given in the item and restating the information in one's own words is a strategy for "unpacking" the problem. New evidence has changed ideas about light and how it travels.

The main idea in this prompt is that science may change in light of new evidence. Since nothing in science is "always" true, answer choice A cannot be correct. Answer B is may be a positive statement related to all people in general. But scientists check on each other 's work as part of science. If work were not carefully done, misconceptions and errors would be caught by other scientists.

Not all new ideas are good ones. In science an idea must be tested and proven before it is considered better. Therefore, answer C is not correct. Answer D is correct. The nature of science is that it changes with new evidence.

Emily wants to determine the effect of mixing liquid A with liquid B. In the lab, she has standard chemistry equipment (beakers, flasks, Bunsen burners, etc. and the lab's library has science books and journals.

In one scientific journal, Emily discovered that a chemist has alresdy crested this reaction. The chemist's results indicate that mixing 30 mL of liquid A and 60 mL of liquid B results in 5 mg of a precipitate. What action should Emily take?

A Do not repeat this experiment because the results are already known.

B Attempt to repeat the experiment in an effort to confirm or refute its results.

C Use the experiment as a guide top preform a different but related experiment.

D Assume that the results are accurate and use them to design a new experiment.

Science example 5 (page 43):

A is not correct because even though the experimental reaction has been done, it has not been validated by other scientists so that the entire scientific community accepts it. Answer B seems to be correct because the experiment has been reported and needs to be confirmed by others. Science is replicable. However, before deciding that B is the best answer, students must continue reading the choices.

Answer C is not correct because to compare two experiemnts, they must be carried out in an identical manner. Answer D is incorrect since one can not assume correctness. The results of the experiment must be proven and validated by many repetitions of the experiment by different scientists.

Unpacking the Testlets

What will be the next two odd numbers after 14?

A 15 and 16

B 15 and 17

C 16 and 17

D 16 and 18

What do you know about odd and even numbers that will help you answer the question?

Transparency master: Mathematics example 1

Unpacking the Testlets

Shanita has a bucket of dimes and nickels. How many ways can she make 30¢ using dimes and/or nickels?

A. 1

B 2

C 4

D 5

What is a good strategy to solve situations in which you must identify "all of the ways"?

Transparency master: Mathematics example 2

Unpacking the Testlets

A gallon of gas costs $1.49. Which is the *best* estimate for the cost of 50 gallons?

A. $2

B $50

C $75

D $149

What do you know about estimation that will help you answer the question?

Transparency master: Mathematics example 3

Following the pattern and the equation, what should be the next two numbers?

$v + 1 = n$

v	n
3	4
6	7
9	10
12	13
?	?

A $v = 13$ and $n = 14$

B $v = 15$ and $n = 16$

C $v = 16$ and $n = 17$

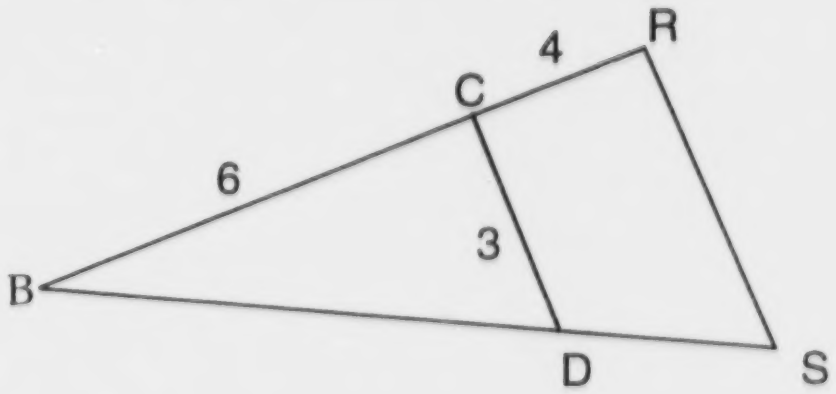
D $v = 24$ and $n = 25$

What are the <u>two</u> criteria that must be met in answering this question?

Transparency master: Mathematics example 4

In this figure $\overline{CD}$ is parallel to $\overline{RS}$.

What is the measure of $\overline{RS}$?



A 3 units

B 4 units

C 5 units

D 7 units

Transparency master: Mathematics example 5

Unpacking the Testlets

Christie put $1000 in a savings account which earns 7.5% interest compounded annually. Approximately, how much money will she have in the account after 16 years?

A $1,200

B $2,200

C $3,180

D $1,120

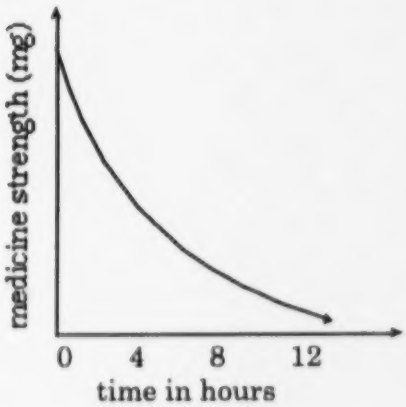
Describe the information you must use in figuring out this answer.

Transparency master: Mathematics example 6

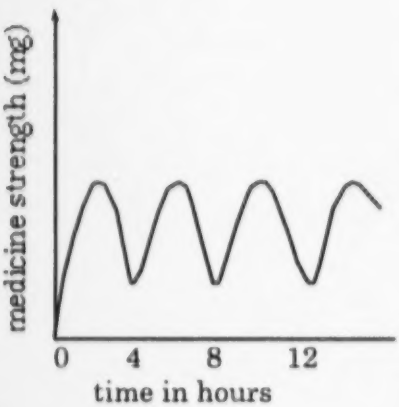
150 mg of a medicine is taken every four hours. During the four-hour period, the amount of medicine in the blood stream declines until the next dose is taken. Which of the following graphs *best* describes the amount of medicine in the blood stream over a period of time?

A

B



C

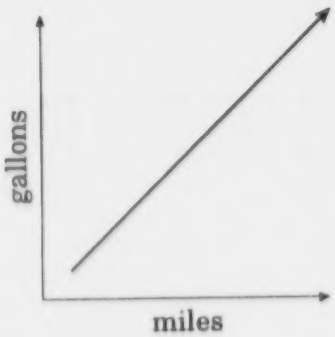


D

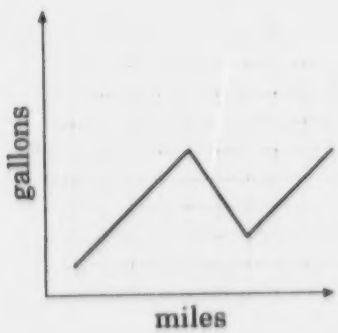
Transparency master: Mathematics example 7

Which graph *best* represents the relationship between the number of gallons of gas in a car's tank and the number of miles driven when the car starts off with a full tank?

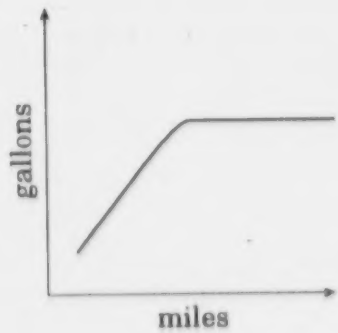
A



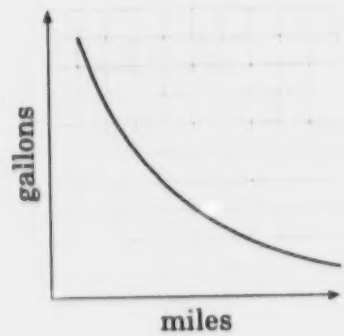
B



C



D



Transparency master: Mathematics example 6

Unpacking the Testlets: Teacher Notes for Mathematics

Mathematics example 1 (page 47):

Often students will repeat phrases that they have memorized and respond with correct answers without understanding the underlying concepts. "Numbers that end with 0, 2, 4, 6, or 8 are even," they will say. "Odd numbers end with 1, 3, 5, 7, and 9." All is fine until the student starts to think, *"Is it even numbers that have 0, 2, 4, 6, 8, or are those the odd numbers? And do I look at the first number or the last number?"*

What will be the next two odd numbers after 14?

A 15 and 16

B 15 and 17

C 16 and 17

D 16 and 18

What do you know about odd and even numbers that will help you answer the question?

This transparency provides an opportunity to talk about how understanding ideas allows students to figure out answers to new questions that they might not have seen before. During the discussion be certain that there is conversation about even numbers being those that are evenly divisible by 2 (those that will always pair up with nothing left over) and that even and odd numbers alternate when one is counting. This is easily illustrated by an even number of counters paired on the overhead and one more placed in view. Twelve counters may be paired, and one more makes 13 (a counter without a partner). If one more is added to 13 counters, there are 14 and again there is an even number because all counters are paired.

Ask different students to explain why A, C, and D are incorrect answers, and B is the correct response.

Mathematics example 2 (page 48):

The question posed at the bottom of the transparency is a starting point for a discussion of this item. Students may suggest many possible strategies, but it will be important for the conversations to focus on the prompt that asks for the total number of ways Shanita can make 30¢. Making an organized list or a chart are helpful approaches when "all ways" are being sought.

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Sometimes students have difficulty knowing how to

get started making a chart or an organized list. How many columns are needed? How should the columns be labeled? What goes first on the chart? How can you tell if you have listed all possibilities?

Rather than showing or telling students how to create this chart or organized list, invite students to talk with a partner and together make a chart. Volunteers could make their chart on the board. (Several pairs could do this to see if students approached the task differently.) One organized list might look like this:

Dimes	Nickels	Sum
3	0	30¢
2	2	30¢
1	4	30¢
0	6	30¢

Shanita has a bucket of dimes and nickels. How many ways can she make 30¢ using dimes and/or nickels?

A 1

B 2

C 4

D 5

What is a good strategy to solve situations in which you must identify "all of the ways"?

Would it make a difference in the answer if the column labeled nickels came first? What is the advantage of having a column labeled "sum"?

Answer choice A indicates that there is only one way. This is obviously incorrect because she could make 30¢ with all dimes or with all nickels.

Answer choice B shows that Shanita found only 2 ways. Logically, this is not correct because she can also combine dimes and nickels.

Answer choice D is a distractor for students who recognize that there are more than 2 possible ways but do not figure the possibilities carefully. Based on the chart above, answer C is correct.

Mathematics example 3 (page 49):

Estimates are informed "best guesses." They are based upon what you know mathematically and the circumstances of the problem. In other words, a good estimate is one that is reasonable in relation to the situation that has been presented.

In choosing the most appropriate estimate from a list such as this, students need to figure out how each answer was obtained. Some answer choices are easy to interpret. For example, answer B would be correct only if the 50 gallons of

gas cost $1.00 each. Likewise, answer D would be true if the person bought 100 gallons rather than the 50 gallons for $1.00 per gallon.

That leaves answers A and C to consider. If one gallon costs $1.49, two gallons of gas would cost $2.98. The question asks for an estimate for 50 gallons, so an answer of $2 cannot be correct based on the cost of two gallons. This leaves answer C. Ask students to explain why $75 would be an appropriate estimate. (Students are likely to say that $1.49 is almost $1.50 and 50 x $1.50 is $75. Or they might say that 100 gallons would cost $149 which is almost $150, and half of $150 is $75.)

A gallon of gas costs $1.49. Which is the best estimate for the cost of 50 gallons?

A. $2

B. $50

C. $75

D. $149

What do you know about estimation that will help you answer the question?

Mathematics example 4 (page 50):

Reading the test question carefully is always important. In this item students must find an answer that matches the pattern in the table and also demonstrates the equation $v + 1 = n$. Begin with the question posed on the overhead. Be certain that the students understand the word "criteria."

Ask students to tell in their own words what the equation means. What pairs of numbers greater than 50 would solve the equation? (Have students give several examples such as $v = 55$ and $n = 56$ or $v = 91$ and $n = 92$.) Are all of the answer choices possible solutions for the equation?

What is the pattern in the table? (Each new row has numbers that are 3 more than the ones in the row above.) Continuing the pattern for the column labeled v, what would the next number be? (15) If you solve the equation using $v = 15$, would the resulting value for n be 3 more that the number in the row immediately above it? (Yes. 13 + 3 = 16)

Following the pattern and the equation, what should be the next two numbers?

$v + 1 = n$

v	n
3	4
6	7
9	10
12	13
?	?

A $v = 13$ and $n = 14$
B $v = 15$ and $n = 16$
C $v = 16$ and $n = 17$
D $v = 24$ and $n = 25$

What are the <u>two</u> criteria that must be met in answering this question?

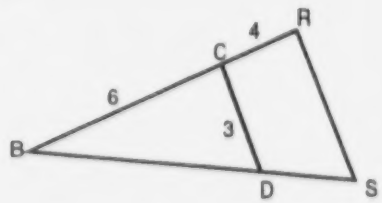
Answer choices A, C, and D fulfill only one of the two criteria given in the question. Answer B is correct.

Mathematics example 5 (page 51):

Begin by asking students what statements they can make about the figure. That is, what do you know? What does "parallel" mean? What does the line over the letters mean? How would you name the angles in this figure?

In this figure $\overline{CD}$ is parallel to $\overline{RS}$.

What is the measure of $\overline{RS}$?



A 3 units
B 4 units
C 5 units
D 7 units

Then talk about what they are being asked to do in the prompt. What question are you trying to answer? Can you rephrase the question? (For example, "How long is line RS?")

Eliminating any obvious wrong answers is one way to begin. Answer choice A is not possible because line CD is 3 units and line RS is longer than line CD. Another strategy is figuring out where each answer choice comes from. Be sure to caution students that this is not a problem to be solved by measuring since the figure may not be drawn to scale.

A. $\overline{RS}$ is parallel to $\overline{CD}$. If CD is 3, then RS cannot be 3 because the rays for each side of angle B have been extended and the distance between the rays is getting greater.

B. $\overline{RS}$ is longer than $\overline{CD}$, so 4 could be an answer. But 5 or 6 could also be possibilities unless there is another way to figure this out.

C. Angle B is common to triangle BCD and BRS. Since $\overline{CD}$ is parallel to $\overline{RS}$, angles BDC and BSR are congruent. So there is a relationship between sides $\overline{BC}$ and $\overline{CD}$ and $\overline{BR}$ and $\overline{RS}$. BC/CD = 6/3 BR/RS = 10/? Six divided by three is two and ten divided by five is two. Five units must be the answer.

D. This looks like one of those weird answers. Anyone getting this answer simply added lengths 3 and 4 to get 7.

Mathematics example 6 (page 52):

Have students begin by answering the question on the transparency. In this case, there is no unnecessary

information. The original amount (principal) Christie put into her account was $1000. The money earns 7.5% and is compounded annually. The question indicates that the money will be left in the account for 16 years. "How is simple interest figured? (Interest equals Principal times Rate times the amount of time.) How is compound interest figured? (Balance equals Principal times Principal plus Rate times the amount of time.) Try probing for understanding: "Does it matter whether interest is compounded annually or compounded quarterly?"

Another question to pose to students is "What is the correct way to write the decimal equivalent for a percent? Why do you need to do this?"

Students might begin by looking for any answers that they think are obviously incorrect. Figuring the interest on just 3 or 4 years should help eliminate 2 responses. Here is an explanation of where each answer comes from.

Christie put $1000 in a savings account which earns 7.5% interest compounded annually. Approximately, how much money will she have in the account after 16 years?

A $1,200

B $2,200

C $3,180

D $1,120

Describe the information you must use in figuring out this answer.

A. $1,200 is the amount of interest computed using the simple interest formula.
   $I = PRT$ $\quad\quad$ $\$1{,}200 = \$1000 \cdot .075 \cdot 16$

B. $2,200 is the balance in the account when simple interest is added to the original amount.
   $\$2{,}200 = 1000 + 1000 \cdot .075 \cdot 16$

C. $3,180 is the correct amount determined by using the compound interest formula,
   $B = P(1 + R)^T$ $\quad\quad$ $\$3{,}180 = 1000(1 + 0.075)^{16}$

D. $1,120 is the result when the simple interest formula is misapplied and an incorrect decimal is used for 7.5%.
   $\$1{,}120 = 1000 + 7.5 \cdot 16$

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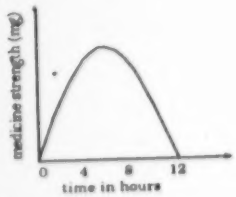
Mathematics example 7 (page 53):

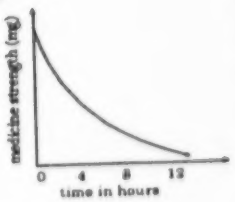
One way to begin the discussion is to ask students to talk about how medicine gets into a patient's bloodstream. "Why would the level of medication in a patient's bloodstream vary during a four or six hour cycle of medication?" Without looking at the graphs, ask students to describe the level of medicine in the patient's blood- stream at the time the pill or liquid is ingested, one hour later, two hours later, three hours later, and four hours later when it is time to take another dose.

150 mg of a medicine is taken every four hours. During the four-hour period, the amount of medicine in the blood stream declines until the next dose is taken. Which of the following graphs *best* describes the amount of medicine in the blood stream over a period of time?

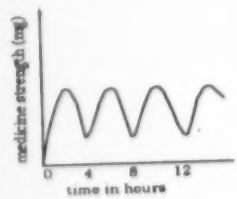
A



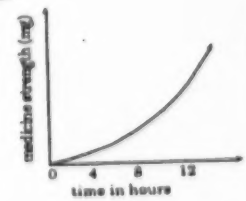
B



C



D



"Looking at the four graphs, what does the *x*-axis represent? What does the *y*-axis tell?" Ask students if there are any graphs that they would rule out right away. Why?

A review of each possible answer follows:

A At first glance this graph looks like a possible answer. The level of medication is low at the O hour when the patient first takes the medicine. It continues to rise, peaks about half-way through the curve, and then drops back down. However, this interpretation ignores the times given along the *x*-axis. This graph would more appropriately represent medication taken on a twelve hour cycle.

B This graph is obviously incorrect because it indicated a high level of medicine when the patient first ingests the medication.

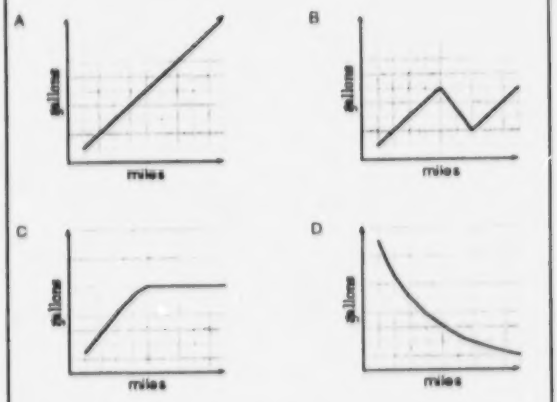
C This graph shows a repeated cycle of low levels at the beginning, peaks about half-way through the medication cycles, and declines as the time approaches for another dose. The cycles are at four-hour intervals, matching the information in the prompt. This is the correct answer.

D This graph begins in an appropriate position, but never displays the fluctuations of medication in the patient's bloodstream.

Mathematics example 8 (page 54):

Rather than starting with the question posed on the overhead, this discussion might begin with a look at the graphs. "What do the labels on each axis tell you? (Note that gallons refers to number of gallons in the car's fuel tank and miles refers to the number of miles the vehicle is driven.) What statements could you make about each graph?"

Which graph *best* represents the relationship between the number of gallons of gas in a car's tank and the number of miles driven when the car starts off with a full tank?



For example, graph A indicates that the more miles the car is driven, the more gallons of gas are in the car. Not logical!

In graph B there is fluctuation in the amount of gas in the car as more miles are driven. At first glance this graph looks like it might work, since a driver could stop and get gas along the way. "What is wrong with this idea?" (The point representing amount of fuel must start off high and decline as the car is driven. Fill-ups would result in sharp jumps in the amount of gas, not gradual increases.)

Graph C, like A, shows a gradual increase in the amount of gas in the car as the vehicle is driven. This is obviously not the correct response.

Graph D is the correct answer. There is a large amount of fuel in the vehicle that gradually drops as the car is driven. While in practice the graph representing the drop in fuel is likely to show some gradual slopes and some sudden drops, according to whether the driver is in stop and go traffic or on the open road at a consistent speed, this graph shows the appropriate relationship of miles driven and amount of fuel remaining.

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My Shadow

by Robert Louis Stevenson

1. **The word "shadow" is most closely related to which of the following words?**

   A had
   B shade
   C down
   D show

2. **According to the poem, the funniest thing about the shadow is the way he does which of the following?**

   A grows
   B jumps
   C plays
   D sleeps

3. **In the third verse, what does the speaker think the shadow is?**

   A a hero
   B a friend
   C a pest
   D a stranger

Transparency master: Reading example 1

My Shadow
by Robert Louis Stevenson

To a very young child, the world is full of new things to notice and think about. Read this poem by Robert Louis Stevenson to see what this child is thinking about.

I have a little shadow that goes in and out with me,
And what can be the use of him is more than I can see.
He is very, very like me from the heels up to the head;
And I see him jump before me, when I jump into my bed.

The funniest thing about him is the way he likes to grow-
Not at all like proper children, which is always very slow;
For he sometimes shoots up taller like an India-rubber ball,
And he sometimes gets so little that there's none of him at all.

He hasn't got a notion of how children ought to play,
And can only make a fool of me in every sort of way.
He stays so close beside me, he's a coward you can see;
I'd think shame to stick to nursie as that shadow sticks to me!

One morning, very early, before the sun was up,
I rose and found the shining dew on every buttercup;
But my lazy little shadow, like an arrant sleepyhead,
Had stayed at home behind me and was fast asleep in bed.

Text for reading example 1

Rudolph Sandwiches

The following recipe tells you how to make one Rudolph Sandwich for a wintertime treat.

A. **Cut one slice of whole wheat bread into triangles.**

B. **"Glue" triangles together with peanut butter.**

C. **Use peanut butter glue to attach raisin eyes (3 raisins per eye) and a red cherry nose.**

D. **Stick 2 pretzel sticks between bread slices on each side to make antlers.**

1. **How many raisins do you need to make 4 Rudolph Sandwiches?**

   A 4 **C 10**

   B 6 **D 24**

Transparency master: Reading example 2a

Rudolph Sandwiches

2. **What is the *best* way to read a recipe?**

   A **Read one line at a time as you follow the reicpe.**

   B **Scan the recipe; look for the amounts of each ingredient.**

   C **Read from the end of the recipe and work back to the beginning.**

   D **Read the whole recipe first; then read each section as you need it.**

3. **What utensil are you *most likely* to use to make this recipe?**

   A **knife** C **measuring cup**

   B **bowl** D **spoon**

Transparency master: Reading example 2b

"A Night with a Wolf"
by Bayard Taylor

1. **In the poem "A Night with a Wolf," which lines best express the poet's theme?**

   A **"Each of us felt, in the stormy dark,/ That beast and man were brother."**

   B **"I crept along in the darkness,/ Stunned, and bruised, and blinded."**

   C **"Wolves in the forest, and bears in the bush,/ And I on my path belated."**

   D **"Each of us went from our hiding place/ Forth in the wild, wet morning."**

Transparency master: Reading example 3a

A Night with a Wolf
by Bayard Taylor

High up on the lonely mountains,
Where the wild men watched and waited;
Wolves in the forest, and bears in the bush,
And I on my path belated.

The rain and the night together
Came down, the wind came after,
Bending the props of the pine-tree roof,
And snapping many a rafter.

I crept along in the darkness,
Stunned, and bruised, and blinded;
Crept to a fir with thick-set boughs,
and a sheltering rock behind it.

There, from the blowing and raining,
Crouching, I sought to hide me.
Something rustled; two green eyes shone;
And a wolf lay down beside me!

His wet fur pressed against me;
Each of us warmed the other;
Each of us felt, in the stormy dark,
That beast and man were brother.

And when the falling forest
No longer crashed in warning,
Each of us went from our hiding place
Forth in the wild, wet morning.

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The Wolf
by Georgia Roberts Durton

When the pale moon hides and the wild
wind wales,
And over the tree-tops the nighthawk sails,
The gray wolf sits on the world's far rim,
And howls: and it seems to comfort him.

The wolf is a lonely soul, you see,
No beast in the wood, nor bird in the tree,
But shuns his path; in the windy gloom
They give him plenty, and plenty of room.

So he sits with this long, lean face
to the sky
Watching the ragged clouds go by.
There in the night, alone, apart,
Singing the song of his lone, wild heart.

Far away, on the world's dark rim
He howls, and it seems to comfort him.

From *The Random House Book of Poetry for Children*
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"The Wolf"
by Georgia Roberts Durton

2. In "The Wolf," which words *best* describe the wolf?

A feared and lonely

B wild and strong

C lean and mean

D smart and sneaky

If you were asked to draw a picture of the wolf in this poem, how would you depict him?

Transparency master: Reading example 3b

"A Night with a Wolf" and "The Wolf"

3. How is the poem "A Night with a Wolf" *most* different from "The Wolf"?

   A It tells a story.

   B It is more descriptive.

   C It uses rhyme.

   D It is more realistic.

Transparency master: Reading example 3c

Winslow Homer
Reporter in Paint

1. In the first paragraph, what does it mean to have a "discerning eye"?

A an indifferent attitude toward the subjects of his paintings

B a harsh and critical approach toward painting faces and figures in oil

C the ability to capture on canvas the most important elements of the scene

D a fondness for machinery, industry, and city life

- *What does the first paragraph, as a whole, tell about Winslow Homer?*
- *What conclusions can you draw about what "a discerning eye" may mean?*

Transparency master: Reading example 4a

Winslow Homer
Reporter in Paint

by Alice Elizabeth Chase

Winslow Homer was a famous artist of the nineteenth century. Read the following passage to learn more about his style of painting.

Always observant of the work around him, Winslow Homer was the forerunner of the modern news photographer when, during the Civil War, he was sent to the front as a war correspondent. Drawings of soldiers and their life in field and camp, which he sent back, were transferred by hand to wood blocks and printed in Harper's Weekly, the popular magazine of the time. Photography was in its infancy and Homer used pencil and brush instead of camera. He had the essentials for success: a discerning eye, skill and speed in drawing, a feeling for the news value of an incident, a sense of humor, and human sympathy.

Study of a Soldier

Homer was a New Englander. His father ran a hardware store in Boston; his mother, who had "a pretty talent for painting flowers in watercolor," came from Maine. The boy began to draw as soon as he could hold a pencil. At nineteen he was apprenticed to a lithographer, and later did free-lance illustrating, but his formal art training was scanty.

In 1864, Homer exhibited several paintings at the National Academy and at twenty-nine he was made a member. A trip to Europe did not change his style or his interest in the American scene. From boyhood he had loved the country; his subject matter is drawn from the life of the farm, the school, the small town. A gentle humor, warmth toward people, especially women and children, and a hint of story share in the appeal of his painting.

During a winter in England he became fascinated by the violence of the sea, and in 1884 he moved to Prout's Neck, Maine, where he built himself a cottage on the cliffs overlooking the ocean. There, with interludes of fishing

continued on the next page

Text for reading examples 4a through 4c

continued from previous page

and hunting in the north woods, and wintering in the Caribbean, he lived alone for the rest of his life, seeing few people, doing his own cooking and housework, and continuing to paint.

The Sea

Winslow Homer's ideal of art perfectly fitted nineteenth-century taste. "When I have selected the thing carefully, I paint it exactly as it appears," he said. This was essentially the theory of all nineteenth-century realists. Homer sometimes worked on a subject for years, painting swiftly, but laying the canvas aside for long intervals. He built a studio on runners, with a plate glass window, so that he could push it to the view he wanted and study it in all weathers. He would select essentials, leaving out cluttering detail. He had an unusual ability to see and record light and atmosphere and an instinct for design. In the finished work he gathered memories of many aspects of a view giving the spectator a sense of sharing in it.

Pleasure boating is the theme of Breezing Up, which shows a small boat scudding before a rising breeze. Heeling hull, boiling wake, and cut-off sail give the sense of speed so dear to sailors. More serious in mood is The Herring Net, where men who make a living from the sea hunch over their shimmering catch. Mists shroud the distant ships, and dark sky and rolling waves in the sunset light warn of a stormy night. In his late paintings, Homer omits people entirely, and devotes himself to recording the majesty, the power and the loneliness of the sea.

One of Homer's important contributions to American art was his handling of watercolor. Before the nineteenth century the medium had served only for studies and sketches but Homer, like Turner in England, used it for finished works. With it he caught the brilliance of changing sun and air.

Platt and Munk, Publisher. Public Domain.

Text for reading examples 4a through 4c

Winslow Homer
Reporter in Paint

2. Which of the following is a characteristic of Winslow Homer's art?

A It teaches a lesson.

B It tells a story.

C It disturbs the viewer.

D It displays bold splotches of color.

Skim the passage, looking for general characteristics of Homer's art.

Transparency master: Reading example 4b

Winslow Homer
Reporter in Paint

3. **Based on the passage, all of the following express the mood in some of Winslow Homer's paintings except which one?**

   A gentleness **C** warmth

   B humor **D** indifference

4. **What is the author's attitude toward Winslow Homer?**

   A hostile **C** admiring

   B critical **D** indifferent

Transparency master: Reading example 4c and d

The Base Stealer
by Robert Francis

Poised between going on and back, pulled
Both ways taut like a tightrope walker,
Fingertips pointing the opposites.
Now bouncing tiptoe like a dropped ball
Or a kid skipping rope, come on, come on,
Running a scattering of steps sidewise,
How he teeters, skitters, tingles, teases,
Taunts them, hovers like an ecstatic bird,
He's only flirting, crowd him, crowd him,
Delicate, delicate, delicate, delicate-now!

What best describes the mood created in the poem by Robert Francis?

A suspenseful

B inspiring

C frightening

D peaceful

Transparency master: Reading example 5

Unpacking the Testlets

For each underlined item, choose the correction to be made or "Make no change" if there is no correction.

In order to find Nirvana, he must first find himself through religious rituals, such as <u>fasting,</u> <u>meditating,</u> <u>and</u> <u>chants.</u>

A to fasting, meditating, and chanting

B to fast, meditation, and chanting

C to fast, to meditate and chanting

D Make no change.

Transparency master: Reading example 6

Unpacking the Testlets: Teacher Notes for English Language Arts

Reading example 1 (pages 62 and 63):

Distribute "My Shadow" and allow time for students to read it silently.

Question 1: Ask students to think about the meaning of "shadow." Which of these words has a meaning most similar to "shadow"? Discuss the possibilities with the students, helping them to understand that a shade is like a shadow in that both occur when light is blocked off. Have a student look up the word "shadow" in a dictionary to confirm that the root word is "shade."

Question 2: Suggest that students find the stanza that tells "the funniest thing." Students can skim to the second verse and follow along as someone reads aloud the stanza. Answering this question provides a good example of how to go back to a passage, skimming for a certain part to reread carefully. Once students find the line "The funniest thing about him is ..." they can easily identify A as the correct answer. Before moving on to the third question, ask students to discuss how you knew to give them the clue of finding the stanza that tells "the funniest thing."

Question 3: Ask students, "What does the speaker say about the shadow in the third verse?" As students reread the third verse, ask them to identify what the speaker thinks (that the shadow does not know how children are supposed to play, makes a fool of the speaker, and stays so close that he seems to be a coward). Since "coward" is not one of the answer choices, students need to think about which word best describes the shadow. They can eliminate "hero" and "friend," since the speaker does not admire the shadow's behavior. Likewise, if the shadow stays so close to the speaker, he is not really a stranger. A pest is a nuisance—and the shadow does annoy the speaker. The correct answer is C.

My Shadow
by Robert Louis Stevenson

1. The word "shadow" is most closely related to which of the following words?
   - A had
   - B shade
   - C down
   - D show

2. According to the poem, the funniest thing about the shadow is the way he does which of the following?
   - A grows
   - B jumps
   - C plays
   - D sleeps

3. In the third verse, what does the speaker think the shadow is?
   - A a hero
   - B a friend
   - C a pest
   - D a stranger

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Reading example 2 (pages 64 and 65):

Reading example 2 is a series of questions based on the recipe for making Rudolph Sandwiches. Transparency 2a has the recipe and the first question. Transparency 2b has questions 2 and 3.

Rudolph Sandwiches

The following recipe tells you how to make one Rudolph Sandwich for a wintertime treat.

A. Cut one slice of whole wheat bread into triangles.
B. "Glue" triangles together with peanut butter.
C. Use peanut butter glue to attach raisin eyes (3 raisins per eye) and a red cherry nose.
D. Stick 2 pretzel sticks between bread slices on each side to make antlers.

1. How many raisins do you need to make 4 Rudolph Sandwiches?

A 4 C 10
B 6 D 24

Before looking at the questions, ask students to name the ingredients for this recipe and then to relate in their own words the steps in making this holiday treat. Reading for information is a skill that all students need to acquire. You may wish to ask students when they need to use this skill and spend a few minutes talking about how important reading is to all content areas.

Question 1: This question might also have been classified as a mathematics question. Rather than tell students how to solve the problem, ask for volunteers to explain how they would find the answer. After students have agreed upon the correct response, ask students to speculate on where the wrong answers came from. ("A" is the number of sandwiches in the problem. "B" is the number of raisins on one sandwich. "C" is 4 sandwiches plus raisins on one sandwich. "D" is the correct answer.)

Rudolph Sandwiches

2. What is the *best* way to read a recipe?

A Read one line at a time as you follow the reicpe.
B Scan the recipe; look for the amounts of each ingredient.
C Read from the end of the recipe and work back to the beginning.
D Read the whole recipe first; then read each section as you need it.

3. What utensil are you *most likely* to use to make this recipe?

A knife C measuring cup
B bowl D spoon

Question 2 applies to all recipes. Good cooks read through the recipes to see what ingredients are needed and if there are any special directions. Then they reread section by section (sometimes ingredient by ingredient) as they carry out the directions. This makes answer choice D the best one. Talk about why answers A, B, and C are not the *best* ways to proceed.

Question 3 again asks students to make a judgment. Which utensil would you be *most likely* to use, not which utensil could you use. Since the bread must be cut and the peanut butter spread on the bread, a knife (answer A) is a better choice than a spoon. Neither a bowl nor a measuring cup would be helpful in cutting or spreading the peanut butter.

Reading example 3 (pages 66 through 69):

Reading example 3 is a series of questions based on two poems about wolves. Give students a copy of the handout and provide time for them to read the selections. They need the copy for reference as you display the questions on the overhead.

Question 1 "A Night with a Wolf": You might begin by asking students, "What is the most important idea, or theme, of this poem?" Encourage students to discuss this question and to put their answers in their own words before they analyze the choices. Students need to understand that the main idea of the poem is how the man and the wolf came together for comfort during the long and frightening night. After they have discussed the theme, lead them to discuss which is the best answer.

"A Night with a Wolf"
by Bayard Taylor

1. In the poem "A Night with a Wolf," which lines best express the poet's theme?

   A "Each of us felt, in the stormy dark,/ That beast and man were brother."

   B "I crept along in the darkness,/ Stunned, and bruised, and blinded."

   C "Wolves in the forest, and bears in the bush,/And I on my path belated."

   D "Each of us went from our hiding place/Forth in the wild, wet morning."

Answer choice B considers the difficulty the man was having. Answer C tells the reader that wolves and bears and the speaker were all in the forest. Answer choice D tells how the speaker and the wolf left the next day. Answer A is the correct answer because it tells how, during the storm dark, the man and the wolf came together like brothers for comfort.

Question 2 "The Wolf": As students describe how they would paint the wolf, ask them for references to the poem to support their interpretation. "Why did the author say that the wolf is a 'lonely soul'?" "How might his howl comfort him?" During the discussion, students should talk about the other animals' fear of the wolf as a predator. Through this discussion students should recognize that, while answers B and C could also apply to a wolf, answer A is the *best* choice related to the wolf as described in the poem. The poet is emphasizing the separateness and loneliness of the wolf.

"The Wolf"
by Georgia Roberts Durton

2. In "The Wolf," which words best describe the wolf?

   A feared and lonely

   B wild and strong

   C lean and mean

   D smart and sneaky

If you were asked to paint a picture of the wolf in this poem, how would you depict him?

"A Night with a Wolf"
and
"The Wolf"

3. How is the poem "A Night with a Wolf" most different from "The Wolf"?

   A It tells a story.

   B It is more descriptive.

   C It uses rhyme.

   D It is more realistic.

Question 3: "A Night with a Wolf" and "The Wolf"

This question asks students to compare the two poems, looking for differences rather than similarities. Students should be able to eliminate C quickly, since both poems use rhyme. Most students should also be able to eliminate D, recognizing that a wild animal such as a wolf would not realistically lie down with a human being. B is a possibility, since "A Night with a Wolf" does contain some description, for example the wind and rain. However, "The Wolf" has even more description, since it emphasizes the sound of the wolf's cry and paints a vivid picture of the pale moon, the clouds, the nighthawks, and the wolf itself. Therefore, A is the correct answer. "A Night with a Wolf" does tell the story of one particular event, of the how the man and the wolf comforted each other during the storm.

Reading examples 4a through d (pages 70 through 74):

This article about Winslow Homer exemplifies the longer texts that are typical of EOG and EOC reading passages. This might be a good time to remind students that when they are working independently, as they would be on a test, they need to think about the prereading strategies that you led them through when the teacher is directing the lesson. "Do you know anything about Winslow Homer?" "What message does the subtitle of the passage give you?" There are three transparencies (four questions) to accompany about this passage.

Winslow Homer
Reporter in Paint

1. In the first paragraph, what does it mean to have a "discerning eye"?

   A an indifferent attitude toward the subjects of his paintings

   B a harsh and critical approach toward painting faces and figures in oil

   C the ability to capture on canvas the most important elements of the scene

   D a fondness for machinery, industry, and city life

- *What does the first paragraph, as a whole, tell about Winslow Homer?*
- *What conclusions can you draw about what "a discerning eye" may mean?*

Question 1: Help students find context clues for the word "discerning" as they answer the first question posed in italics at the bottom of the transparency. The first paragraph tells the reader that he was observant, that he drew pictures rather than taking photographs, and that he was successful as an artist.

From these clues, students should be able to answer the second italicized question

and figure out that the correct answer is C. Homer had the ability to "show" the most important elements in his pictures. Answer A is incorrect because he was not indifferent. Nor was he harsh and critical, as stated in choice B. Answer choice D is essentially irrelevant.

Winslow Homer
Reporter in Paint

2. Which of the following is a characteristic of Winslow Homer's art?

   A It teaches a lesson.

   B It tells a story.

   C It disturbs the viewer.

   D It displays bold splotches of color.

Skim the passage, looking for general characteristics of Homer's art.

Question 2: To answer this question, students need to go back to the passage, skimming for general characteristics that describe all of Homer's paintings. There may be some students who have not internalized that reading for different purposes determines how they approach a passage. "What does it mean to skim a reading passage?"

The passage tells students that "gentle humor, warmth toward people, ... and a hint of story share in the appeal of his paintings." Answer choices C and D may be eliminated because nowhere does the passage mention that Homer's paintings have these qualities. There is no reason given in the passage for choosing answer A. The correct answer is B, a phrase taken directly from the text itself.

Question 3: Begin by asking students to tell what the prompt is asking them to do. If the students do not point out that the question is asking them to identify the one that does <u>not</u> express the moods in Homer's paintings (i.e., what is not true rather than the more common question of what is true), take time to talk about this. Many students miss questions of this nature because they do not read the prompts carefully.

Winslow Homer
Reporter in Paint

3. Based on the passage, all of the following express the mood in some of Winslow Homer's paintings except which one?

   A gentleness C warmth

   B humor D indifference

4. What is the author's attitude toward Winslow Homer?

   A hostile C admiring

   B critical D indifferent

Since this question asks students to summarize the moods which Homer created, discussion should confirm that his paintings of people and the country life show gentleness, humor, and warmth. He was not indifferent—to people or to nature. Therefore, D is the correct answer.

Question 4: Ask students to go back to the passage, looking for words that reveal the author's attitude toward Winslow Homer the man and Winslow Homer the artist. They may find phrases such as

"skill and speed in drawing"
"sense of humor and human sympathy"
"gentle humor, warmth toward people"
"unusual ability to see and record light ad atmosphere and an instinct for design"
"Homer's important contribution to American art"

From a list such as this, they should conclude that C is the correct answer. The author is not hostile or critical; nor is he indifferent. Rather, he is admiring of Homer and his accomplishments.

Reading example 5 (page 75):

The Base Stealer
by Robert Francis

Poised between going on and back, pulled
Both ways taut like a tightrope walker,
Fingertips pointing the opposites.
Now bouncing tiptoe like a dropped ball
Or a kid skipping rope, come on, come on,
Running a scattering of steps sidewise,
How he teeters, skitters, tingles, teases,
Taunts them, hovers like an ecstatic bird,
He's only flirting, crowd him, crowd him,
Delicate, delicate, delicate, delicate- now!

What best describes the mood created in the poem by Robert Francis?

A suspenseful
B inspiring
C frightening
D peaceful

First, ask students to visualize what is happening in the poem. "Can you see a baseball player 'poised' to steal a base?" "In this poem, what does the word 'poised' mean?"

Consider the actions he is engaged in—bouncing, running a scattering of steps ... he teeters and taunts the crowd. "What action images is the poet creating?"

In answering a question such as this example, look for obvious answers than can be eliminated. Ask students to suggest answers they think are clearly inappropriate.

Students should suggest to eliminate D, since the scene is not peaceful, and B, since it is not inspiring. Frightening is too strong an emotion for stealing base, thus eliminating answer C as a possibility. Choice A is the correct answer.

Reading example 6 (page 76):

Unlike the other multiple choice questions in this section, this item measures students' grasp of grammar rather than their abilities to respond to questions from literature. Students need to recognize that the issue is not their knowledge about Nirvana, but rather are the modifiers parallel in form. If the underlined words are correct, then answer choice D (Make no change.) is the appropriate response. If the underlined words are not correct, then students must determine what an appropriate modification might be, selecting from answer choices A, B, or C.

Fasting and meditating are gerunds. To make the three words similar, students need to replace the "ing" form or change "chants" to "chanting." Examining the answers reveals that choice A has all three words in the same form, while B and C still use different forms.

For each underlined item, choose the correction to be made or "Make no change" if there is no correction.

In order to find Nirvana, he must first find himself through religious rituals, such as fasting, meditating, and chants.

A to fasting, meditating, and chanting

B to fast, meditation, and chanting

C to fast, to meditate and chanting

D Make no change.

On the following pages are several examples of open-ended questions. There are general rubrics provided for reading and mathematics. As you use the questions that are included here and additional ones of your own, have students brainstorm what a specific rubric for the questions would include. The goal is for students to learn what constitutes a top quality answer.

General Rubric for Open-ended Reading Assessments

0 Answer is unresponsive, unrelated, or inappropriate,

1 Answer deals with material on a concrete, literal level that is accurate in most dimensions.

2 Answer deals with most aspects of the question and makes correct inferences, although minor errors may exist. Comprehension is on an inferential level and thekey skills are synthesis and analysis.

3 Answer addresses all aspects of the question and uses sound reasons and cites and explains appropriate examples. Uses skills of evaluation as well as analysis and synthesis.

Transparency master: Reading general rubric

Unpacking Open-ended Assessments

Beginning in the fall of 1998, open-ended assessments will be given in grades 4 and 8. These EOG open-ended tests are designed to measure higher level thinking skills by requiring students to apply or demonstrate skills and knowledge beyond the recall level. They commonly require the integration of knowledge and skills from more than one curricular area. Instead of choosing from a list of provided possible answers, students are required to generate their responses and write out their thoughts.

Each open-ended question will be built around a reading passage or passages with test items that are loosely linked to the content of the passage. The passage or passages may be a variety of genres and writing for different purposes. The content may be from science or social studies as well as literature. Students may be directed to respond to open-ended items by

- completing a constructed response,
- writing sentences,
- designing brochures,
- interpreting data from charts or graphs,
- solving a problem and explaining the process,
- drawing tables or charts, and
- writing short essays.

The open-ended assessments will be scored with rubrics. Each question on the EOG open-ended tests will have a specific rubric that defines the level of expectation for that item. These specific rubrics are built upon general rubrics for reading and mathematics.

The Division of Accountability Services has released a general rubric for reading and one for mathematics. Since these rubrics can provide direction and assistance in helping students address open-ended questions, they are printed as transparency masters for your use. Use these general rubrics

"The Shadow"
by Robert Lewis Stevenson

The last line of the poem says that the shadow had "stayed home behind me and was fast asleep in bed."

What does this line mean? Why was the shadow "asleep" at the home?

Use information in the poem to explain your answer.

Transparency master: Open-ended questions: "The Shadow"

to practice with students reading open-ended questions critically and asking themselves appropriate questions about how to fully respond to the prompts. Included also are several sample open-ended questions with suggested discussions.

Revisiting "My Shadow"

Distribute to students the text on page 63 for "My Shadow" by Robert Louis Stevenson. Use the transparency master to display the questions or write them on an answer sheet for students.

"My Shadow"
by Robert Lewis Stevenson

The last line of the poem says that the shadow had "stayed home behind me and was fast asleep in bed."

What does this line mean?
Why was the shadow "asleep" at the home?

Use information in the poem to explain your answer.

An appropriate first question for students to ask themselves may be "What do these questions ask me to do?" (Students need to realize that a full and complete answer will address both questions.) The questions ask students to use the information from the poem to explain two things:

1) what it means to say that the shadow had stayed home and was fast asleep in bed, and
2) why the shadow was asleep at home.

You might model for students asking yourself these questions: "Why had the shadow stayed home in bed? When does this happen? What lines in the poem lead me to draw my conclusions?" The first line in the last stanza, "very early, before the sun was up," is an important one for the students to understand. Students need to consider if the shadow is not with the child, why isn't it there and where is it?

One way to answer these questions is to help students see the playful misconceptions that the narrator has about his shadow. For example,

1) In the first stanza, does the shadow literally jump into the bed before the child? If not, what really happens?

2) In the second stanza, does the shadow actually grow like a child? If not, what really happens?

3) In the third stanza, does the shadow really stay so close to the child because he is a coward? If not, what really

happens?

4) In the last stanza, the shadow is not beside the child because the sun has not yet risen. Is this really because the shadow is still in bed? If not, what is really happening?

Another way to help students to define what a clear and accurate answer would be is to construct a specific rubric together as a class. A specific rubric for the questions about "The Shadow" may look like this:

"My Shadow"
by Robert Lewis Stevenson

0 Answer is unresponsive, unrelated, or inappropriate

1 Answer states that the shadow was not outside with the child, or that the shadow was asleep at home, but the response does not explain how or why the shadow was absent. Details are sparse, confusing, or vague.

2 Answer explains that the shadow was absent because the sun had not yet risen. However, the explanation either has minor errors, is too brief, or lacks clear supporting information from the poem.

3 Answer explains that the shadow was absent because the sun had not yet risen. The answer contains specific information from the poem ("before the sun was up") and develops clearly and correctly the idea that a shadow is formed when an object, such a the child, blocks a source of light, such as the sun. The answer indicates that the narrator of the poem is either mistaken in believing the shadow is still in bed or is playfully continuing his personification.

Since each question on the EOG open-ended tests will be assessed with a specific rubric that defines the level of expectation for that item, students should find it very helpful to consider, as they read questions and answer them, what the rubric may look like that will describe a complete and accurate answer.

Revisiting "Winslow Homer: Reporter in Paint"

An open-ended question that would accompany "Winslow Homer: Reporter in Paint" on pages 71 and 72 might ask students to make inferences from the passage:

In what ways did Winslow Homer's art works of the Civil War resemble photography?

Distribute copies of the passage about Winslow Homer and pose the question to students. Remind students that even though the prompt does not specifically tell students to reference the text, they should do so as they describe the comparisons between Homer's art and photography.

Since this is a lesson designed to teach students how to organize a response to an open-ended question, encourage them to underline or highlight references which seem applicable. These references may include:

Paragraph 5: "'I paint it exactly as it appears.' " "This is essentially the theory of all nineteenth century realists."

Paragraph 1: "discerning eye, skill and speed in drawing, a feeling for the news value of an incident, a sense of humor, and human sympathy"

Paragraph 3. "gentle humor, warmth toward people, especially women and children, and a hint of story"

Paragraph 6: "devotes himself to recording the majesty, the power and the loneliness of the sea."

Using these references, students might construct similarities as they write their responses. Here are a few examples:

Both Homer's art and photography:

- show things realistically, as they actually appear,
- record newsworthy events for people,
- illustrate story, including human stories, and
- capture the essence of both scenery and people.

Ask students to suggest what the specific rubric for scoring this question might say.

General Rubric for Open-ended Mathematics Assessments

0 Answer is unresponsive, unrelated, or inappropriate. Nothing correct.

1 Addresses item but only partially correct; something correct related to the question.

2 Answer deals correctly with most aspects of the question, but something is missing. May deal with all aspects but have minor errors.

3 All parts of the question are answered accurately and completely. All directions are followed.

A Mathematics Example

On page 92 there is a transparency master of an open-ended mathematics question that requires students to recognize a pattern and to then explain how they arrived at their solution. To obtain the top score, students must find the correct answer and explain clearly how they determined the answer.

There will be 31 toys on the fifth shelf. In explaining why they say "31," some students may draw a table to organize the given information. One column would identify the shelf and the second column would give the corresponding number of toys. (A few students, functioning at a literal level, may actually draw the toys on the shelf.) Some students might describe a trial and error process, while others will explain that the number of toys on any given shelf is twice the shelf number plus 1. ($2n+1$)

> In the main window of the toy store, Jan noted an interesting triangular display of shelves.
>
> The top shelf held one toy. The next shelf down held 3 toys, and the third shelf down held 7 toys. The fourth shelf down held 15 toys. If the pattern continued, how many toys would the fifth shelf hold?
>
> Answer the question and explain how you solved the problem.

One strategy for helping students determine "clear and complete answers" to open-ended questions is to have volunteers show on the board or overhead how they (or hypothetical students) responded. Use the generic mathematics rubric to guide a discussion of the various responses.

The last two pages of this book are for students. Helping them take greater responsibility for developing good study habits is important. We hope these pages will help you start some conversations in your classroom.

Unpacking the Testlets

In the main window of the toy store, Jan noted an interesting triangular display of shelves.

The top shelf held one toy. The next shelf down held 3 toys, and the third shelf down held 7 toys. The fourth shelf down held 15 toys. If the pattern continued, how many toys would the fifth shelf hold?

Answer the question and explain how you solved the problem.

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Checking Your Own Study Habits

A good test taker is a good student every day.

For each sentence, check the box which tells about you.

	Never	*Sometimes*	*Usually*	*Always*
I am in my seat and ready to learn when class begins.				
I have my paper and pencil ready for each lesson.				
I complete my homework and bring it back to class.				
I pay attention in class.				
When I do not understand, I ask for help.				
I complete class assignments.				
I am a good listener.				
I work cooperatively with other students.				
I use my time wisely.				

Strategies to become a better student:

1. Change your bad habits! Get rid of all of the "sometimes" and "never" checks on your list.
2. School is your job. Make learning your work each day.
3. Find out what you do not know. Set goals for yourself. Ask for help when you do not understand.

Getting Ready For Tests

Be ready for tests by keeping up with your work each day.

Get ready for big tests with extra review.

	Never	*Sometimes*	*Usually*	*Always*
Do you find out what information the test will cover and what kind of questions it will have?				
Can you explain in your own words what you will need to know and be able to do on the test?				
Do you study for tests by reviewing your homework and classwork papers?				
Do you review over several days, studying some every day?				
Do you get plenty of rest the night before and have a good breakfast on the day of the test?				
As you begin the test, do you read the directions carefully and ask questions when you do not understand?				
Do your tests show what you have learned?				

Strategies for greater success:

1. Get rid of the "nevers" and "sometimes" from this list.
2. Take action to be "test-ready" by finding out exactly what will be on your tests. Make time to review and study.
3. Believe in yourself. You are the key to your own success!

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